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ORIGINAL LECTURES.

BONE LESIONS DEPENDENT UPON NERVOUS DISEASE.

A Clinical Lecture delivered at the Hospital of the University of Pennsylvania.

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GENTLEMEN: I shall to-day present to you a subject which I think has never before been lectured on in this institution, and will therefore have at least the charm of novelty. I see this patient for the first time, but I am informed that he has upon his right foot a large growth which has been of slow development. He has been sent from the Orthopædic Dispensary for an opinion; and the question which has to be determined, is whether this tumor, which is evidently bony in its nature, is the result of disease originating in and confined to the bone, or whether it is the evidence of trophic changes in the bone due to disease of the nerve-centres.

In order to give you an intelligent idea of the ground upon which the opinion that I shall formulate is based, it seems necessary to discuss briefly the whole question in regard to the trophic changes in the bones which follow diseases of the nervous system. I shall therefore leave the consideration of this individual case for a moment, and discuss the nature of the changes in the bony tissues which follow, or are connected with, diseases of the nervous system. Prominent among these changes are the alterations which are found to take place in general paralysis of the insane, and which probably are also present in other forms of insanity. Many years ago, it was noted that the bones of insane patients were frequently broken, and that not rarely there would be multiple fractures in the same case. These frequently recurring fractures have been brought forward by the opponents of insane asylums as evidences of cruel and rough handling on the part of attendants, but we now know that there is often a tendency of the bones to fracture upon the least exposure to force. Under certain circumstances, the bones of persons suffering from general paralysis, and probably the bones of those suffering from other forms of insanity become enlarged and readily fracture. When broken, these bones unite easily and with great rapidity, and with the formation of an excess of callus, so that there may be a large tumor at the seat of the fracture. After death in these cases, it will be found that the bones are notably enlarged; that they are so soft as to be readily cut with a knife; and that there exudes from the cut surface a pink or reddish sanguinolent juice, which, when placed under the microscope, is found to contain large quantities of nuclei and imperfectly developed cells. If a section of such a bone is made, it is shown to be more porous than normal, and the microscope reveals great dilation of the Haversian canals, which are filled with a fluid containing embryonic cells. A very curious feature in this form of bone disease is that it attacks almost exclusively the skeleton of the trunk. It is the ribs, the bones of the pelvis or of the vertebral column which are affected.

I have seen one case in which changes in the bones nearly like these occurred in a person supposed to be suffering from chronic alcoholism. I saw the patient just before death, and am unable to say whether the nervous symptoms were those of chronic alcoholism or whether they were the commencing symptoms of a peculiar form of general paralysis. But in this case it was the limbs which were especially attacked.

Again, it has been found that there is a peculiar form of arthritis connected with hemiplegia, and especially when such hemiplegia is dependent upon diseases of the brain in which there are minute foci of softening. In these cases the diagnosis of this form of arthritis is a matter of importance, for I believe that in nine cases out of ten this condition is supposed to be due to rheumatism, and the patient is believed to be suffering from a second disease—acute or subacute rheumatism—supervening on the attack of hemiplegia. In separating the two affections, it will be noted, in the first place, that hemiplegic arthritis comes on in twenty or thirty days after the attack, and just about the time at which late muscular contraction develops in certain cases. In the second place, the inflammation of the joints, at least in the early stage, is limited to the affected side; there are moderate pain and exquisite tenderness in the affected joints, which are much swollen, the swelling usually developing rapidly and being accompanied by distinct œdema with pitting on pressure. The history of such a case differs entirely from that of chronic rheumatism. In rheumatic arthritis there is no tendency to the development of pus, and little or no tendency to the breaking down of bony tissue, the effusion within the joint being serous and remaining so for months. The cartilages may be removed, but the bone beneath the cartilage becomes hard, thickened, and of irregular stellate growth, and has little or no tendency to ulceration and destruction. Frequently osteophytes are found in the effusion. In the joint affected with hemiplegic arthritis, although the process is very slow and the arthritic changes may continue for months and even years, still there is a tendency for the formation of purulent liquids, and a tendency to the destruction, not only of the cartilages, but also of the bone. You will see in this specimen which I hold in my hand, an illustration of the changes of which I am speaking. This elbow-joint was removed from a woman who died in the Philadelphia Hospital several years ago. This patient was completely hemiplegic on the right side, and completely aphasic. When I first saw her, she complained greatly of pain in the leg and arm. The moment the coverings of the bed were lifted, or the limb approached, she would scream and yell with the mere fear of contact; when the joint was touched, the emotional disturbance became uncontrollable. The joints were swollen, very glossy, and hard to the touch. When she first came under observation, the affection was confined to the hemiplegic side, and was evidently not rheumatic. There was no history of rheumatism, and the joints did not present the peculiarities of rheumatic joints. For many months the joints remained in the same condition, and finally the joints of the other side became slightly affected. After death the lesion of the brain was found to be a large hemorrhage in the neighborhood of the claustrum, completely destroying the external capsule; hence the complete hemiplegia and aphasia, and the secondary nutritive lesions. On opening one of the joints, I found that it contained a moderate amount of purulent serum, that the cartilages were almost entirely destroyed, and that the sur-

face of the articulations was largely affected and eroded. After the bones were boiled, the articulating surfaces were found to be exceedingly porous, and in some places part of the bone had been eaten away. Examining the specimen you will note that the bone is very light, and that its shaft has become exceedingly thin, so that there is not only a destruction of the joint, but atrophy of the shaft of the bone.

There is a third class of diseases of the bone appearing in connection with disease of the nervous system, namely, those which are associated with locomotor ataxia. In this form of bone disease, there are two seats of the alterations, the diaphyses being affected in some instances, while in other cases the epiphyses are the parts involved. You will remember that I said that in diseases of the bone dependent upon insanity, the skeleton of the trunk was the part affected. In locomotor ataxia, the trunkal bones escape almost entirely, and it is the long bones of the extremities which are more especially involved; and the diaphyses are most frequently the seat of the alterations. Attention was first called to this condition, as in bone affections of the insane, by the frequent occurrence of fracture in certain cases of locomotor ataxia, the fractures being produced without obvious sufficient cause; for instance, a man would go to cross one leg over the other, and sustain a fracture of the thigh. At first it was said that this was due to irregular muscular contraction; but it is perfectly clear that no irregular muscular contraction in making such a movement could be powerful enough to break a sound bone. Examination of the bones of those suffering from this variety of fracture showed that they had undergone atrophy. In addition to being atrophied, the bones were very hard. In certain cases this atrophy has seemed to be connected with hypertrophy. This condition has been denied by the French school of observers; but one case has been reported in which the femur of one side was atrophied, whilst the same bone on the other side was enormously enlarged. In other cases, it has been said that while the upper portion of the bone was atrophied and hardened, the lower portion has presented the changes met with in general paralysis. Fractures of these atrophied bones heal with great rapidity, and with the formation of an excessive amount of callus, so that a large tumor will be developed at the position of the fracture. The patient may not complain of the fracture, but may consult the physician on account of the appearance of a hard mass upon his leg. This relation is important, for the man before us is supposed to be suffering from locomotor ataxia.

There may be in locomotor ataxia an arthritis, instead of disease attacking the main shaft. The clinical characteristics of this form of arthritis are entirely different from those of hemiplegic arthritis. In some instances the enlargement is sudden. It may develop in the course of ten days, or it may reach its fullest extent in two or three days. Examining such a joint, it will be found to be painless; the swelling is large, is confined to the neighborhood of the joint, and often ends abruptly. When pressed upon, it feels hard, and does not distinctly pit. The joints remain in this condition for a certain length of time, when one of two changes is liable to occur. Sometimes acute inflammation develops, and acute arthritis and osteitis appear. This is, however, rare. Under these circumstances, the joint suddenly becomes hot, painful, and gives the ordinary clinical appearance of acute arthritis. The more usual change is for the swelling gradually to subside; the joint becomes irregular, but the articulating surfaces do not disappear, and it remains as a hard irregular joint. The effusion does not become purulent, and osteophytic growths are frequently found in the liquid.

In the present case, we desire to know whether this man is suffering from a bone disease which represents one of these trophic forms, or from bone disease of another character. I shall first examine the bony lesion. As you see, there is a large swelling at the right ankle-joint, projecting three inches above the dorsum of the foot. There is no pain in this, either by day or by night. I find no difference in the size of the side on the two sides.

When did this come on? A. "I am a plumber, and about two years ago I was sitting on a board, with my right foot under me, working. Pretty soon the foot felt as though it were asleep, and then I had severe pain. I got up, and found the foot all swollen. I broke the buttons off my shoe and took it off; my leg was black up to the knee. This happened in fifteen minutes. The swelling was as hard as it is now. After this, I was laid up for some weeks, the parts being very sore and painful."

It is clearly impossible that a mass as hard as this could have formed in fifteen minutes. This is evidently a bony tumor. The first tumor must have been of some other nature. The original pain and lameness continued in this foot for four or five months, and then gradually disappeared. He can now walk and attend to his work.

It is perfectly possible that this man had a spontaneous fracture within the ankle-joint at the time of the first attack. This is the only way in which I can reconcile this condition with the history which he has given. Probably in suddenly stooping or rising, he fractured the bone. This was followed, as is the case in articular fractures, by intense swelling, due to rapid effusion. This effusion was absorbed, and we now have a tumor, the result of excessive deposition of callus.

The next point to discuss is whether or not this man has locomotor ataxia. If he has not, the explanation of this symmetrical bony tumor which I have given is not correct, and I cannot explain the nature or cause of the excrescence. The tumor, evidently, is not malignant, for it has been there two years, and is painless.

Before referring to the presence or absence of locomotor ataxia, let me say one word in regard to the time at which the lesions of the bones in that disorder appear. They usually develop just before the symptoms of muscular incoördination make their appearance. In other words, the bone lesions are prodromic. There is one lesion of the bones in locomotor ataxia to which I intended to refer, and which I shall bring in here, a little out of its proper place, because it shows the close connection between the stage of sensory irritation and bone affection in locomotor ataxia. A person will have severe trigeminal neuralgia, perhaps associated with anæsthesia of the region supplied by this nerve without any other symptom, when suddenly the teeth will begin to drop out. They come out without any pain, soreness, or any premonitory symptoms whatever. In some reported cases, the teeth have dropped out during sleep, and threatened strangulation has resulted. We know that this is connected with the atrophic changes of locomotor ataxia. It is observed that after the loss of the teeth, the jaw-bone atrophies until it is reduced to a mere shell. Sometimes all of the teeth have been lost at once; in other cases, only a part at a time. Very rarely have both jaws been affected simultaneously. In these cases, the attention has been centred upon the trigeminal neuralgia, and the changes in the bone, being unaccompanied by pain, have gone on unnoticed. There has really been locomotor ataxia developing high up, involving the root of the trigeminal nerve, and causing the atrophic changes which eventually result in the loss of the teeth. This condition has, in the reported

cases, come on before the symptoms of incoördination.

This patient says that he has been subject to rheumatism for the past four years, but has not had any swelling of the joints. In the majority of cases, the early stage of locomotor ataxia is diagnosed to be rheumatism. He has shooting pains in the arms and in the legs. These are sometimes so severe as to compel him to go to bed. There are also neuralgic pains around the chest, but no feeling of constriction. The patella reflex is entirely absent on both sides. The muscles react normally to electrical stimuli. He says that he has lost sexual power to a certain extent. He never had a period of sexual excitement. He feels giddy at all times, and cannot walk as well at night as in the daytime. He is able to work at his trade, but not as well as formerly; and he thinks that there has been no failure of the sight. You notice that, in standing, he keeps his legs further apart than is natural, and, in walking, he has a slightly straddling gait. He can stand pretty well with his eyes closed; he can also keep his balance for a short time, while standing on one foot, with his eyes closed, and the symptoms of loss of coördination are therefore not distinct in this patient; but the symptoms of the early stage of locomotor ataxia are present in the form of tearing, shooting, and darting pains in the legs and body; the loss of patella reflex; the presence of giddiness, and the inability to walk well in the dark. In separating these of this character from those of rheumatic pains, the characters which I rely upon are the following: The pains are bilateral instead of unilateral; they are relieved by, instead of being made worse by pressure, or if there be any tenderness, it is only at the moment of pain; they are apparently causeless; and, finally, they are associated with loss of patella reflex. Occasionally in locomotor ataxia, there will be some tenderness of the skin when the attack of neuralgia is at its height.

I believe that this man is suffering from the beginning stage of locomotor ataxia. If I found a bony lesion, like the one here presented, associated with absence of the patella reflex, I should strongly suspect beginning locomotor ataxia, but when we have at the same time neuralgic pains and some symptoms of muscular incoördination, I think that the diagnosis is clear.

ORIGINAL ARTICLES.

A CASE OF OVARIOTOMY, FOLLOWED BY RECOVERY,

WITH SOME REMARKS ON RECENT IMPROVEMENTS IN THIS OPERATION.

BY L. S. McMURTRY, A.M., M.D.,
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IN order to place within easy reach of the statistician a case presenting some unusual features, and at the same time to illustrate the efficiency of some recent advances in abdominal surgery, the following case of ovarian cystoma, weighing thirty-three pounds, removed by abdominal section, is reported:

On September 10, 1883, I was called in consultation by my friend Dr. J. M. Meyer to see Mrs. H. S., of Mercer County, with the following history and condition: The patient is twenty-nine years of age, has been married six years, and is without children. About two years ago, she observed an enlargement of the abdomen, and supposed herself to be pregnant, though her menses persisted with regularity and no fœtal movements were felt. At the end of nine months, the tumor had reached in dimensions the extreme limit of pregnancy. It continued to grow, and at the date mentioned had attained occupancy of the pelvis and abdomen from Douglas's cul-de-sac to the diaphragm. The diagnosis of a polycystic tumor of the ovary was established by the usual methods, including exploration of the uterus, analysis of the urine, and chemical and microscopical examination of the contents of the tumor obtained by puncture with the hypodermic syringe. The characteristic wasting and anxious expression of countenance were to be observed, and the patient suffered with dyspnœa and an irritable stomach, both the results of pressure. The pulse ranged from 110 to 120 per minute, and the respiration was correspondingly accelerated.

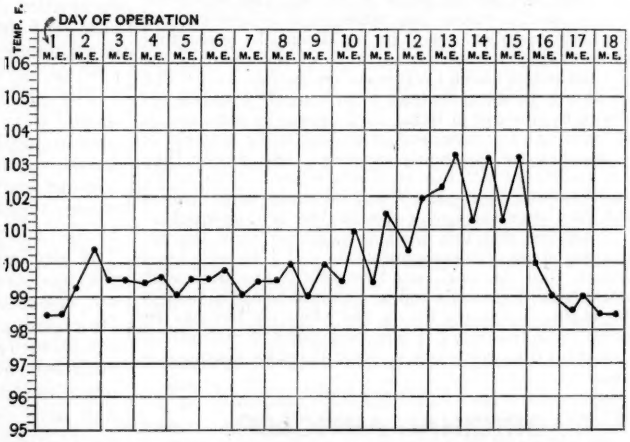
On September 19th, at twelve o'clock, the operation was performed in the presence of Drs. J. M. Meyer, George Cowan, I. S. Warren, Fayette Dunlap, and Mr. Harry Cowan, a student of medicine, all of this city, and Dr. George Calvert, of Perryville. Drs. Meyer and Cowan kindly took charge of the anæsthetic—ether—and Drs. Warren and Dunlap and Mr. Cowan gave me valued and efficient aid throughout the operation.

The patient occupied a pleasant room in the second story of a delightful country place, where a pure atmosphere prevails, and a good light was had for the operation. On making an incision about five inches in length in the median line, the abdominal muscles were found much thinned by the tension and pressure to which they were subjected. The bleeding from the lips of the abdominal incision was controlled by artery-compressors and pressure with a sponge before opening the peritoneum. On exposing the tumor, two firm patches of parietal adhesions were encountered upon either side of the umbilicus, and introducing my hand into the left hypochondrium, other adhesions to the abdominal wall were separated. Realizing more sensibly the great dimensions of the tumor at this stage of the operation, the incision, which already extended to the symphysis pubis below, was extended more than three inches above, passing to the left of the umbilicus. The tumor, while of an irregular globular shape, was found to project in every direction, filling Douglas's cul-de-sac and the pelvis below, and being snugly adapted to the antero-posterior inclination of the diaphragm above. The periphery of the tumor was an aggregation of many small cysts, which gave the impression of a solid mass, while the interior was occupied by a number of larger cysts.

Plunging a Wells's trocar into the tumor and directing its point in various directions, I was enabled to empty the large cysts, dislodge the tumor from its situation, and turn it out through the incision. As the great cysts were emptied, the increased play of the diaphragm in respiration was observed by all around the table. The pedicle was short, broad, and thick, and situated upon the left side. Finding that one ligature could not safely encompass it, it was secured by Peaslee's chain ligature, so that it

was ligatured in four sections. The ligature was of silk furnished me by Messrs. Tiemann & Co., of New York, and bore strong tension without breaking. The tumor was cut away about three-quarters of an inch beyond the ligature. The breadth and thickness of the pedicle were conspicuous at this stage of the operation, the surface of division from the tumor being fully five inches by two inches. The ligatures were cut short and the stump dropped into the abdomen. The right ovary was then examined and found to be in a healthy condition. The toilet of the peritoneum was made with the utmost care. Following the practice of the great master in abdominal surgery, Mr. Lawson Tait, of Birmingham, after sponging out the cavity of the pelvis and of the lumbar region, I filled the cavity of the abdomen with warm distilled water by means of a tube running from a basin held above the table. Holding the divided abdominal walls together with one hand, I moved the intestines with the fingers of the other hand so as to wash them thoroughly. The water was then removed with sponges, and this process twice repeated, when the water came out free from the tinge of blood. After placing five squeezed sponges in the abdominal cavity, I then proceeded to close the wound. After inserting the deep sutures, which were ten in number and of silk, the sponges were removed and the peritoneal surface found quite clean. The lips of the wound being brought evenly and firmly together by the deep sutures, the superficial sutures were inserted, the patient cleansed and placed in bed. The wound was dressed with dry absorbent cotton, adhesive strips applied, the abdomen covered with a thick layer of cotton, all secured by a broad flannel bandage around the body. The operation consumed one hour and a half. The patient was very sick from the ether and vomited a great deal during the operation. During the twelve hours following she suffered severely with nausea and vomiting, and ejected from the stomach at intervals dark fluid commonly described as "coffee-ground" vomit. She reacted, however, promptly, and six hours afterward the pulse was 102, and temperature 99.2°. Small draughts of warm water only were administered, and the nausea and vomiting gradually subsided. More than a pint of healthy urine was drawn with the catheter at 6 P. M. She slept at intervals during the night and on the morning following the operation was cheerful and without pain or nausea, with pulse 94 and temperature 99.5°. Food of every kind was withheld, and only occasional draughts of warm water were given to allay the thirst of which the patient complained.

The history of the next six days is that of continued progress. Beginning with small quantities of chicken-broth on the second day, food was given regularly, and was taken with relish. The temperature remained slightly above the normal, and the pulse ranged between 80 and 90 per minute. On the morning of the seventh day, the wound was examined, and found quite dry, with firm adhesive union. The superficial, and every alternate one of the deep sutures were removed and the dressing replaced. On the following day, the remaining sutures were removed, and the adhesive strips reapplied. On the fifth day after the operation, the patient passed urine without the aid of the catheter, and on the eighth day the bowels acted freely in response to an enema. On the eighth day the patient complained of pain in the vicinity of the pedicle, and exhibited evidences of inflammatory action. The skin was hot, the pulse quickened, and pain, tenderness, and swelling were manifest in the broad ligament of the left side. This was the beginning of a circumscribed inflammation about the stump, which continued several days, and gave some anxiety. The temperature then gradually rose, as shown in the accompanying diagram, until on the evenings of the thirteenth, fourteenth, and fifteenth days it reached 103°; on the sixteenth day it fell to 99°, and was normal after that date.



The treatment of this complication may be appropriately comprehended by the expression "good nursing." The hot vaginal douche was given every three waking hours, and hot cloths were applied to the hypogastrium. During the entire progress of the case no anodyne whatever was administered, with the exception of one-eighth of a grain of morphia on the night of the twelfth day. The pain was at no other time so intense as to necessitate the exhibition of opium, and believing the routine use of this drug after ovariotomy to be harmful by checking the eliminative processes and impairing the nutritive functions, it was withheld. I would not detract from the great value of this remedy in the treatment of inflammatory affections in general and of the abdomen particularly. By allaying pain, producing sleep, checking the early vomiting of peritonitis, and suspending the peristaltic movements of the intestines, its value in peritonitis is simply incalculable. But it should not be used as a prophylactic, and should be held in reserve as

long as possible. In the case here reported the pain did not necessitate its use, and no vomiting occurred. Notwithstanding the elevation of temperature the appetite was maintained, and the secretions were not checked. The bowels acted almost daily during the existence of the circumscribed peritonitis, and the skin and kidneys were active in the performance of their functions. On the thirteenth day the menses appeared, and seemed to exert a good influence upon the pelvic inflammation. On the sixteenth day there was a marked improvement in the condition, and the fever and abdominal tenderness and swelling rapidly disappeared.

The exceptionally large stump was the focus of the pelvic inflammation, and it could not reasonably be expected that the repair of such extensive lesions would be without marked local and constitutional disturbance. On the twenty-first day an abdominal belt was placed upon the patient; she was allowed to sit up; and in a short time her recovery was complete. Throughout the entire after-treatment I had the unremitting aid and coöperation of Dr. J. M. Meyer, the attending physician, for whose judicious suggestions and efficient services the most grateful acknowledgments are due.

This case illustrates more than one of the great improvements which have so widely extended the domain of abdominal surgery and reduced the mortality of ovariotomy. It is well known that when, after recovering from the shock of the operation, patients do badly, both the symptoms and the lesions are those of diffuse suppurative peritonitis. It has been pretty well determined of late that this condition is the result of septicæmia instead of injury to the peritoneum by the operation. Hence the great reduction of mortality since operators have bestowed such painstaking care in checking hemorrhage and cleansing the peritoneum. The determination of this fact is at the basis of the recent extension of the field of abdominal section, which now includes intraperitoneal hemorrhage from gunshot and punctured wounds, as well as diseased conditions of the viscera. This knowledge has also dissipated the traditional fear concerning a movement of the bowels after abdominal section, since laxatives are administered when indicated with advantage. In the case detailed above, the bowels were maintained in a soluble condition throughout the entire progress of the case, and with manifest advantage. Mr. Lawson Tait has demonstrated that bad symptoms following ovariotomy are often dissipated by the administration of a purgative in their incipiency. Indeed, regarding the peritoneum an immense lymph-sac, he believes that purgation often acts as a substitute for drainage.[1] These views certainly are worthy of most careful consideration in view of the splendid results which Mr. Tait has achieved.

In considering various methods in ovariotomy the greatest interest has always centred upon the treatment of the pedicle. The intra-peritoneal method is rapidly superseding the use of the clamp, and the prediction made by Dr. Emmett several years ago that "the ligature will become in future the means generally employed for securing the pedicle" seems to be almost verified. The experiments of Spiegelberg and Waldeyer, made in 1868, have removed all theoretical apprehension that the distal portion of the ligatured stump would be thrown off by sloughing into the abdominal cavity, and the splendid results obtained by this method at the hands of various operators demonstrate its superiority from a practical standpoint. The recent experimental investigations of Mears and Longstreth[1] in this country confirm the results obtained by Spiegelberg and Waldeyer, and demonstrate additional facts of the utmost practical importance.

[1] The Pathology and Treatment of Diseases of the Ovaries, by Lawson Tait, F.R.C.S., etc. Fourth edition, p. 315.

A SIMPLE OPERATION FOR FACIAL NEURALGIA.

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A. E. L., an old gentleman, past seventy, of fine constitution and very healthy in every respect, except being a sufferer from tic douloureux, has consulted me several times in the last year for his complaint, and has taken the various remedies likely to benefit him, with very little relief. As he continued to suffer more and more, I advised him to let me operate on him as the only means of relief. But the neuralgia being general, affecting the branches of both the supra- and infra-orbital nerves, I could not promise him with entire confidence that an operation on the infra-orbital nerve only would be sufficient, although that seemed to be most affected. The pains would dart all over the side of the head and face at the least touch, even of a hair of the head or beard, or from the impression of a breath of air, or even from the movement of the jaws in mastication. His suffering became so great and constant, and the neuralgic attacks so severe from attempts to eat, that he began to run down from sheer exhaustion from want of food and pain.

He was so weak at the time of operation, that it was a very important matter at his advanced age to make the operation as simple as possible, consistently with the hope of permanent relief. Therefore, discarding Carnochan's operation of trephining the antrum and following up the nerve beneath the orbit and removing it; and Langenbeck's slighter one, of dividing the nerve far back in the orbit with a tenotome and drawing it out through the infra-orbital foramen, I merely cut down upon the infra-orbital foramen, and with a fine steel drill, such as dentists use, improvised of piano-wire, drilled out the nerve in its entire length, as far back as the sphenomaxillary fissure. The immediate effect of the operation was to abolish all sensation in the previously sensitive parts, and to enable him to use his jaws without suffering the darting pains he formerly had. And not only was the sensitiveness of the face relieved, but also that of the side of the head,

[1] The Intraperitoneal Method of Treating the Pedicle in Ovariotomy, with Experiments, by J. Ewing Mears, M.D., and Morris Longstreth, M.D. THE MEDICAL NEWS, October 6, 1883.

showing that the trouble was in the distribution of the infra-orbital nerve, and that the affection of the branches of the supra-orbital was a reflex one. Barring some swelling of the face, he had no trouble afterwards. The wound soon healed, and he has been able to expose himself to the air, and to eat with impunity, and now, although, nearly two months have elapsed, he remains free from pain and is enjoying excellent health.

REFUSION IN CARBONIC OXIDE POISONING.

BY WM. S. HALSTED, M.D.,
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Read before the New York Surgical Society, November 13, 1883.)

CONTRIBUTIONS to the treatment of cases poisoned by carbonic oxide, the most noxious constituent of coal and illuminating gases, are especially worthy of consideration because of the great frequency of, and mortality from, this form of poisoning. In Adolph Lesser's tables[1] carbonic oxide figures as the most common poison, and the one which yields the highest percentage of cases. Refusion of blood is literally a depletory transfusion, in which the blood withdrawn is returned to the circulation of the loser. Volkmann,[2] in discussing exarticulations at the hip-joint, suggests the feasibility of catching the blood lost, peradventure, in this operation, and returning it to the loser through the divided femoral vein; and Esmarch[3] has, in one instance, endeavored to act in accordance with Volkmann's suggestion, but his patient died while preparations were being made for transfusion. Hueter,[4] in frost gangrene of both feet, transfused centrifugally three hundred and fifty cubic centimetres of the patient's own blood, defibrinated, into the left posterior tibial artery; and believes that he thereby preserved a portion of the frozen part. The right foot, untransfused, underwent an extensive forfeiture. Highmore,[5] evidently not aware that it had already occurred to others to refuse blood, offers "remarks on an overlooked source of blood supply for transfusion in post-partum hemorrhage," and recommends utilizing the blood lost by the mother. Other than these, I know of no hints as to attempts at refusion.

In carbonic oxide poisoning refusion involves an additional factor; viz., the oxygenation of the poisoned blood employed; and is, therefore, an infusion of the purified, defibrinated for the poisoned, entire blood of the individual.

A most radical case of refusion is the following:

On the 15th of last May, Mr. A. S. G., aged 57, a man of medium size and good physique, was found unconscious in a state-room of the steamer "Bristol" by the ticket-taker, who observed a strong smell of gas in the room. He was taken in an ambulance to the Chambers Street Hospital, where he arrived at *9.5 A.M.* The house-surgeon states that, on admission, the patient could not be aroused. Respiration superficial; pulse fairly strong, and eighty-five beats a minute; temperature not taken; skin pale and cold; lips slate-colored; pupils somewhat dilated. Was put in a hot-air bath, and given whiskey hypodermically. At *10.30 A.M.*, when I first saw the patient, he was still comatose. His eyes were partly open, and his pupils equal, slightly contracted, and irresponsive to light; face ashy pale, and surface of body cold. The respirations, twenty-eight a minute, were abdominal, and so superficial that it was almost impossible to count them. Pulse 96, small, and easily compressible; feeble conjunctival and plantar reflexes; other superficial reflexes absent, except cremasteric on left side. Deep reflexes could not be tested because of the rigidity which existed. Both arms were flexed —the right more strongly than the left. *10.50 A.M.* Right radial artery exposed above wrist for about one inch, and two ligatures passed under it. A canula, introduced centripetally into the artery, was held in place by one ligature; the other was used to occlude the vessel peripherally. Through the canula five hundred and twelve cubic centimetres of blood were withdrawn, defibrinated, strained, and kept at a temperature of about 37.5° C. in a transfusive apparatus similar to that which is before you. *11.30 A.M.* Temperature 35.4° C., pulse 92; respiration 22, full and dyspnœic. Superficial reflexes well pronounced; eyes closed; but patient can be made to open them. Rigidity of limbs has, in great measure, disappeared. *11.32 A.M.* Two hundred and eighty-eight cubic centimetres of defibrinated blood, all that could be obtained from the five hundred and twelve cubic centimetres, were refused through the canula in the artery towards the heart—centripetal arterial infusion. At *11.45*, the injection was completed. Temperature 36.6° C., pulse 104, respiration 28, deep and labored. Superficial reflexes possibly exaggerated. The usual post-transfusion rigors lasted for half an hour. *12.35 P.M.* Three hundred cubic centimetres withdrawn, as before, through the canula, defibrinated, and mixed with one hundred and twenty-eight cubic centimetres of defibrinated blood taken from another patient. *1 P.M.* Temperature 38.2° C., pulse 128, respiration 28. *1.5 P.M.* Patient's pallor most striking; one hundred and ninety-two cubic centimetres of the mixed blood infused. The color returned rapidly to his face when from eighty to one hundred cubic centimetres had been injected, the change from a deathly white to a healthy red taking place in a few seconds. *1.13.* Temperature 39.1°, pulse 120, respiration 40. *2.30.* Temperature 39.4°, pulse 140, respiration 40. *5.30.* Temperature 37.8°, pulse 116, respiration 20. Patient has been gradually returning to consciousness since the first venesection, and now attempt to get out of bed.

May 6.—12.15 A.M. Urine voided voluntarily for the first time since admission, it having previously been drawn off with a catheter. *8.30 A.M.* Tem-

[1] Virchow's Archiv, lxxxiii. 2, p. 193, 1881.
[2] Drei Fälle von Exarticulation des Oberschenkels im Hüftgelenke, R. Volkmann, Deutsche Klinik, 1868, p. 382.
[3] H. Leisrink, Ueber die Transfusion des Blutes, Volkmann's Sammlung klinischer Vortrage, No. 41; Landis, Die Transfusion des Blutes, p. 327.
[4] E. Peters, Die Arteriele Transfusion und ihre Anwendung bei Elfreirung, Griefswald, 1874.
[5] Lancet, 1874, 1, 89.

perature 37° (normal), pulse 98, respiration 20; patient in good condition, but, mentally, still a little dull. *4.30 P.M.* Patient eats well, and desires to go home.

7th.—Intellect perfectly clear; remembers that the steward lighted the gas in his state-room about 9.30 P. M. the night previous to his poisoning, but that it went out as the door was closed. Undressed himself in the dark, went to bed, and can recall nothing of the night. Has experienced none of the unpleasant after-effects of the poisoning. Allowed to go home about fifty hours after admission.

Oct. 20, five and a half months after the poisoning, interviewed Mr. A. S. G., and ascertained that he has not had a single unpleasant symptom referable to the effect of the gas.

That this patient would have recovered without such active treatment, is not improbable. It is, nevertheless, certain that the bloodletting exerted a most favorable influence, changing almost instantly the entire aspect of the case. The scarcely perceptible respirations became at once conspicuously full; in a few moments the absent superficial reflexes had returned, and the rigid arms relaxed. The body surface grew gradually warmer, and after the first infusion the temperature had risen from 35.4° C. to 36.6° C. (a rise of 3° F.). The pulse and respirations kept pace with the temperature. The first infusion prepared the subject for a second depletion, and contributed to the rise in temperature, and probably to the improved circulation. The second infusion was decidedly indicated, as evidenced by the impression it produced in the patient's color.

In the light of Kühne's[1] experiments on animals, it is a question whether the bloodletting alone would not have rescued all the cases of gas poisoning in the human subject in which a depletory transfusion has been successful. Kühne (*loc. cit.*) found that venesection of itself could save life if the respirations were as much as two in a minute. From twenty-three cases of transfusion for carbonic oxide poisoning of which I have notes, twelve terminated favorably. In two (Casse,[2] Lühe[3]) of the twelve successful cases, very small quantities of blood were transfused, and without any immediate good effects. In one (Hüter[4]) of the remaining two cases attempts at depletion were unsuccessful, only a few drops of blood having been withdrawn. In three cases (Garrigues,[5] Halsted) the venesection exerted a decidedly favorable influence. Three cases (Bodt,[6] Mastus,[7] Lehmann[8]) are narrated in articles to which I have not access, and so cannot arrive at any positive conclusions as to which was the more efficacious agent, the venesection or the transfusion. In one case (König[9]) the venesection (the amount of blood withdrawn is not stated) was attended with slight, and the transfusion with no success. The two remaining cases (Jürgensen,[1] Saltzmann[2]) were apparently benefited by the transfusion, and yet in neither is any reference made to the influence of the depletion, although from one (Jürgensen) four hundred cubic centimetres, and from the other (Saltzmann), one hundred and eighty cubic centimetres of blood were abstracted.

Some, then, of the cases claimed for transfusion seem attributable to the venesection which preceded it; and in no instance has it seemed to me clearly demonstrable that transfusion has saved life where venesection had failed.

A few cases are reported by O. Kahler,[3] P. Martin, and others, of venesection in carboxysmus with good results. And of the several cases which have come under my care, I will cite briefly, in proof of the efficacy of venesection, the most serious one in which depletory transfusion was resorted to.

May 5, 1882, at *10.10 A.M.*, Lillie Kent, a robust girl of seventeen, was admitted to the Chambers Street Hospital, suffering from illuminating-gas poisoning. The night before, on retiring, she is supposed to have blown out the gas in her state-room, on the steamer "Providence." On admission, she is said to have been unconscious, moaning, and much cyanosed. Her respirations were shallow, and her pulse rapid and feeble. Temperature not taken. Whiskey and digitalis were given hypodermically. She was put in a hot-air bath, and hot cloths were applied to the præcordia. Flagellation and the inhalation of ammonia would partially arouse her. Artificial respiration was tried, but with what effect is not stated. She would improve temporarily under the treatment, but when left alone would return to her previous condition.

I saw her about *5 P.M.*, her temperature was 39.1° C.; respiration 40; pulse 120. Advised washing the stomach and large intestine with hot water for the purpose of further stimulation. *9 P.M.* Patient much worse, pulse feeble, more rapid and intermittent; respirations very superficial; conjunctiva insensitive, and all reflexes absent. Mouth frothy; occasional facial twitchings and grinding of the teeth; arms and legs rigid—the flexor muscles overpowering the extensors. *9.5 P.M.*, two hundred and four cubic centimetres of blood withdrawn from left basilic vein. Upon this the condition of the patient improved marvellously; almost instantly her respirations became full, and her pulse strong and less rapid. The rigidity of her limbs disappeared, her reflexes returned, and she could be aroused by shaking or speaking loudly to her. *11 P.M.*, attempted to transfuse entire blood from a

[1] Centralblatt f. Chirurg., 1864, No. 9.
[2] Presse Med., Bd. xxviii., 1876.
[3] Transfusion bei Kohlenoxydvergiftung mit günstigem Ausgang. Deutsche mil. aertzl. Zeitschr., Berlin, 1878, vii. 263–267.
[4] Ber. klin. Wochenschr., 1870, No. 28.
[5] New York Medical Record, March 3, 1883.
[6] Bodt. Verhandlungen d. Berl. Med. Gesellschaft, 1, 1866.
[7] Massmann (B. W.). Beiträge zur Casuistik der Transfusion des Blutes, Berlin, 1870.
[8] Massmann (*loc. cit.*).
[9] Evers. Deutsche Klinik, 8, 9, 10, 1870.

[1] Berl. klin. Wochenschr., 1871.
[2] Fall af hoggradig Kolosforgiftung behandlodt med Transfusion. Finska Läkaresällskapetts Handl., Bd. 19, p. 266.
[3] O. Kahler. Virch. Jahresb., p. 420, 1881.
P. Martin. Jahrsschr. f. d. Med., xxv. p. 197–224, 1864.
Henrik Densen in Helsingför. Hospital studien, 2. R. I. 25, 26, 1874, reports a fatal case of gas-poisoning, which was interesting from the fact, that decided reaction was observed during a brief menstruation. (Strange that venesection was not suggested to him by this occurrence.) Tauz, in Biel. Schweiz. Corr., Bd. 12, p. 324, 1871.

Behiew apparatus into patient's right cephalic vein, but failed to introduce more than thirty cubic centimetres.

6th.—During the night, nourishment was administered per rectum. At *6 A.M.*, patient answers questions somewhat intelligently, and at *9 A.M.* takes nourishment by the mouth.

7th.—Feels well, but weak.

It is difficult in any case to know precisely how much of the cure should be attributed to the treatment. When, however, a case like the one just narrated, observed sufficiently long to exclude fluctuation, assumes a decidedly more serious aspect, and then is almost instantly on treatment transformed into rapid convalescence, one feels justified in assigning a cause to the effect.

Many apparently severe cases of carbonic oxide poisoning are recorded which have recovered more or less promptly when exposed to fresh air and stimulation. Some, too, where oxygen[1] is believed to have hastened the convalescence. But if, despite these measures, the patient's condition grows constantly worse, death is virtually certain unless venesection be resorted to.

From the hour of her admission until she was bled—eleven hours—Lillie Bent's condition was growing gradually worse, and ultimately became so bad that her case seemed hopeless: this, in a moment, upon venesection, was transformed into one of apparently certain recovery.

The transfusion produced no appreciable effect, as might have been expected from the small amount of blood injected. As additional proof of the value of bleeding in carbonic oxide poisoning, I might allude to the case of her illicit companion, who, occupying the state-room with her, was likewise poisoned. Less seriously affected by the gas, he was venesected while convalescing. Maniacal and confined in a strait-jacket, he was bled about five hundred and twelve cubic centimetres, and thereupon became so rational and docile that it was no longer necessary to restrain him. To cite, as I might, other less serious cases, in which the beneficial effect of bloodletting was less strikingly apparent, would be superfluous.

Why, then, transfuse if venesection accomplishes so much? If, for no other reason, to allow of repeated venesection, the poisoned individual should be bled freely, unless there be decided contraindications, even after, to all appearances, out of danger, in the hope of diminishing the risk of pernicious after-effects.

Although bleeding of itself will probably suffice to save life in almost all cases which occur in practice, it has been demonstrated by Kühne (*loc. cit.*) that animals poisoned beyond hope of rescue by venesection, can be saved by transfusion. In one of his experiments, where respiration had been suspended seven minutes, he was still able to restore life to the animal by the infusion of defibrinated blood. Aside from experimental demonstrations of the value of transfusion in cases beyond recall by means of bleeding, nothing could be theoretically much more enticing than the plausibility of substituting blood corpuscles, capable of taking up oxygen for such as are incapacitated from so doing by reason of the somewhat (stabile) compound which carbonic oxide forms with their hæmoglobin. Thus the much quoted and meritorious experiments of Panum[1] have led his partisans to believe in the possibility of blood substitution, and to regard the blood corpuscles as something which can be taken from one individual and *transplanted* in another.

But Von Ott[2] has shown the falsity of Panum's deductions inasmuch as he could obtain like results, although making use of a fluid which contained no morphological elements.

Von Ott (*loc. cit.*) has demonstrated, furthermore, that blood corpuscles infused into the circulation are short-lived, and that blood, whether entire or defibrinated, for other reasons is not only no better than, but not as good as, a 0.06 per cent. saline solution for transfusion in acute anæmia. One can not, therefore, properly speak of a substitution or transplantation of blood corpuscles by infusion of them into an impoverished circulation.

Fortunately, however, in carbonic oxide poisoning, it is merely necessary to sustain the patient artificially for a brief period, and for this, undoubtedly, the infused corpuscles can serve as oxygen carriers for a sufficiently long time. For the circumstances, as Von Ott's (*loc. cit.*) experiments teach us, that the infused corpuscles do not become integral constituents of the new organism, but rather are destined to a more or less rapid disintegration and elimination, does not prevent them from circulating, and temporarily taking part in the interchange of gases. Clear, then, as are the indications for transfusion auxiliary to venesection in the treatment of the cases under consideration, the extreme difficulty of obtaining blood at all, to say nothing of sufficient quantity, has, up to the present time, classified the operation with the rarer therapeutic procedures. And we might, indeed, in the treatment of these cases content ourselves with bloodletting, were it not that the practicability of refusion removes what has been, perhaps, the greatest obstacle to the performance of transfusion. To the investigations of Hermann,[3] Donders,[4] and Podolinski, I owe the conception of refunding the purified for the poisoned blood of the victim to carbonic oxide poisoning.

Hermann[5] calls attention to the fact that nitrogen monoxide can liberate the carbonic oxide of the carbonoxyhæmoglobin, and forms a stronger combination with hæmoglobin than does carbonic oxide. And subsequently, Donders (*loc. cit.*), Hermann, and Podolinski (*loc. cit.*) find that oxygen, as air, can,

[1] Virchow Jahresber., 1869, 1320. Two Cases of Poisoning with Illuminating Gas Successfully Treated by the Inhalation of Oxygen. By Alonzo Clark. New York Med. Journ., Aug. 11, 1883. Lockey Stewart, Brit. Med. Journ., Sept. 25, 1875, p. 392, Case of Carbonic Oxide Poisoning in which the Inhalation of Oxygen exerted no Influence upon Patient's Condition.

[1] Archiv f. path. Anat. u. Phys., 1863.
[2] Archiv f. path. Anat. u. Phys., 1883, p. 114.
[3] Archiv f. Phys., v. p. 24.
[4] Archiv f. Phys., vi. p. 553.
[5] Archiv für Anat. u. Phys., 1869.

in a few minutes, free carbonic oxide from hæmoglobin if passed forcibly and in large quantities through the poisoned blood.

As to the best method of infusing fluids into the circulation, good authorities disagree. Of the four possible methods, centrifugally or centripetally into an artery or vein, the question of centrifugal venous infusion is entertained only to be discarded. Hueter, who gives to Von Graefe the honor of being the first to draw attention to centrifugal arterial infusion, deserves the credit of having introduced it to the profession, and strongly advocated the method.

Landois,[1] too, while contrasting in general arterial with venous transfusion, prefers, from a physiological standpoint, the arterial—be it centripetal or centrifugal.

Cohnheim,[2] on the other hand, expresses himself decidedly against centrifugal arterial transfusion, essentially as follows: One should surely, under no circumstances, inject peripherally into an artery; for the peripheral arterial branches contract with such energy against the foreign blood which is entering them, that it is often necessary, in order to overcome the resistance, to exercise pressure sufficiently forcible to rupture the bloodvessels. The case is very different when one injects centripetally into an artery, and employs no more pressure than is required to overcome the existing arterial tension. The blood infused mingles at once with that which is already present in the artery, and flows without resistance into the first branch above, thence into its arterial and capillary ramifications, and from here on, under normal venous pressure, to the heart.

Kümmel,[3] Schede's assistant, produced gangrene at the hand by the centrifugal infusion of a saline solution into the radial artery, thus giving us a demonstration of a disaster which may attend this method, and which he might have foreseen.

We are then restricted to the choice between centripetal arterial and centripetal venous infusion.

Hüter's[4] arguments for peripheral or centrifugal arterial transfusion, hold good for centripetal arterial infusion. He prefers the arterial to the venous transfusion, because the blood by the former method courses slower and more uniformly to the heart; because the minutest air vesicle is retained in the capillaries, and because the danger of phlebitis is avoided.

Landois (*loc. cit.*) adds to these advantages another, viz., that the capillary system, like a supplementary filter, catches all foreign particles which may be present.

The essential advantages of centripetal arterial transfusion in profund asphyxia, says Landois, can be summed up as follows: 1. Arterial blood is thus most directly dispatched to the nerve centres, in consequence of which the venous blood there contained, is propelled onwards into the veins. 2. The filling of the arterial system rejuvenates the feeble circulation by creating a considerable difference in pressure between the arterial and venous systems.

Cohnheim (*loc. cit.*), too, from his experiments on animals, declares the central or centripetal arterial transfusion to be the least dangerous, and at the same time the most completely effectual procedure.

From a practical standpoint, I am also impelled to advocate centripetal arterial infusion.

Besides the case already narrated, it has been my good fortune to transfuse by this method with most brilliant and unexpected success in two cases; one of acute anæmia, and one of septicæmia.

Joseph Hart, aged eleven years, was admitted to Roosevelt Hospital, September 15, 1882, for a compound comminuted fracture of the tibia and some of the tarsal bones. The ankle-joint was involved in the injury, and the soft parts badly mangled. The wheel of a street car had passed over his leg the night before. Patient is said to have lost much blood, and the clothes in which his leg was wrapped furnished evidence to that effect. The parents would not consent to an amputation, and the boy, although perfectly conscious, and able to give an account of himself, was not in condition for it.

At 8.30 P. M., eleven or twelve hours after admission, the patient was cold and unconscious, and his pulse was so rapid and feeble, that it could not be counted satisfactorily. It was estimated to be about one hundred and eighty per minute. I injected one hundred and ninety-two cubic centimetres of a chlor-natrium solution—ClNa ℥j; H_2O Oj—centripetally into the left radial artery, thereupon the pulse became quite full, and one hundred and thirty-five a minute. The boy returned to consciousness, aud his condition seemed to warrant an attempt at amputation—permission to do so having, meanwhile, been obtained. The administration of ether had such a bad effect on the pulse that the operation was deferred, and the leg placed in a hot-water bath. Patient continued to improve, and survived an amputation of the leg performed by Dr. Sands, twenty-five days after admission.

On the 18th of March, 1883, at Ward's Island, I infused defibrinated blood centripetally into the radial artery in a case of septicæmia. The patient, an Italian, about forty years of age, had suffered for several months from a suppurative disease of the ankle and some of the tarsal joints. For about one week prior to the operation he had, almost daily, well-pronounced rigors and a temperature ranging from about 36.1° C. to 40.6° C. He was so feeble that to amputate was deemed inadvisable, even as a last resort. A depletory transfusion was accordingly undertaken. A stout philanthropic German offered to furnish the blood. So plentiful was his subcutaneous fat that not a vein could be seen, although his arm had been carefully constricted below the point at which the basilic vein usually perforates the deep fascia. Dissection for a vein, prolonged until even the would-be donor appeared to be willing to have the search discontinued, failed to discover one. Thereupon the radial artery was exposed without difficulty, although our subject fainted as the incision was being made through the

[1] Die Transfusion des Blutes. Leipzig, 1875.
[2] Vorlesungen über Allgemeine Pathologie, Bd. i. p. 424.
[3] Centralblatt f. Chirurg., 1882, No. 19.
[4] Langenbeck's Archiv, Bd. xii.

integument, and so necessitated the completion of the operation upon the floor. The Italian was next depleted through his right radial artery until the arterial tension was barely sufficient to throw a jet across the graduated jar into which one hundred and seventy-eight cubic centimetres had been allowed to flow.

Immediately thereupon one hundred and eighty-six cubic centimetres of defibrinated blood were infused centripetally into the artery. In a few moments, the patient's pulse had fallen to one hundred and twenty, which was eight beats better to the minute than before the administration of ether. The leg was then amputated just below the middle. The patient's pulse was 112 to 114, weak, but regular, and better than before the amputation.

Cardiac stimulants were of course freely administered, slight post-transfusion rigor, and a temperature of 38.8° C. On the following morning, March 18th, the patient's pulse was 110, and temperature normal; since then, uninterrupted convalescence.

It is only just to add that I have once done centripetal arterial infusion in a desperate case of pyæmia, where the fatal termination was probably precipitated by the operation.

If the infusion of defibrinated blood influenced unfavorably the action of the heart, it certainly was, in part, to be explained by the too heroic depletion which preceded it. This unsuccessful attempt should not militate against the method of injecting the blood, but rather against the indication for so doing, or against the manner or extent of the depletion. The main argument of those who prefer centripetal venous to centripetal arterial infusion is that the former is the simpler. If it be true that the latter is, in any degree, the safer method, the simplicity of the former does not deserve to be considered. For surely one would not feel justified in allowing a patient to die because he believed it to be simpler to do nothing than to make an exertion to save life. Furthermore, instead of being easier, I am sure that it is often more difficult to discover a vein than to expose the radial artery. It was, for instance, impossible to discover a vein in the stout German referred to in this paper.

Jennings,[1] too, one of the more recent advocates of the intravenous method, without having practised the arterial, had considerable difficulty in finding a vein in one instance; and others testify to the same experience. The dangers of intravenous infusion, such as the introduction of air and small clots, and the overpowering of the heart by a too rapid injection, may be, theoretically easy to avoid, but practically death has frequently been brought about by one or more of these causes. To the centripetal arterial infusion pertain, theoretically, none of the dangers which, practically, in the intravenous method, are far from always to be avoided. And from a practical standpoint my cases, which I believe are the first recorded, induce me to advocate the centripetal arterial method.

[1] Transfusion, p. 26, London, 1883.

HOSPITAL NOTES.

MEMORIAL HOSPITAL, ORANGE, N. J.

(Service of DR. WILLIAM PIERSON.)

POPLITEAL ANEURISM CURED BY PERSISTENT COMPRESSION.

Reported by JOHN H. BRADSHAW,
ASSISTANT HOUSE SURGEON.

CONRAD A., age 49; carpenter. History and condition on admission to hospital, July 4, 1883:

A month before admission, patient sustained a fall. He says that, in the erection of a building, he fell through the floor beams; but, straining every muscle, he caught himself in time to be saved from further immediate injury than a severe shock. Two days after this, his attention was called, for the first time, to a lump behind his knee which has increased in size up to the day of entering Memorial Hospital.

Patient is a strong, hearty man, temperate, not subject to any cachexia, and having no history of hereditary disease. Situated in the left popliteal space is a tumor about the size of a goose-egg. This is circumscribed, compressible, and has a marked distensile pulsation.

Pressure on femoral artery lessens the pulsation and size of tumor. Direct pressure upon the swelling diminishes its size. A distinct bruit can be heard.

There is no cardiac trouble. Pulse 72, full and strong. Appetite good. Digestive functions in good order. There are no renal symptoms.

Diagnosis made of sacculated popliteal aneurism, and a trial of the treatment by flexion determined upon. Accordingly, the limb was strongly flexed at the knee and hip, and bound in that position. For twenty-six days this treatment was kept up. During that time, the tumor had diminished in size one-half, had become hard and tense, but still pulsated. The pulsation, however, was very much less than at the start. The tumor had become divided into two—one above and one below the fold of flexion. For most of the time the patient had kept the leg flexed by his own efforts, with no bandage. For a few days during this period, slight œdema of the foot appeared, which passed away after bandaging the leg. The only change in the treatment consisted in the use of a small compress of cloth, upon which the leg was flexed a portion of this time. Full diet was allowed the patient. His appetite had been good, and for most of the time he had wheeled himself about in his chair.

On the twenty-seventh day after being admitted, combined digital and instrumental compression was resolved upon. The instruments used were a conical weight of about seven pounds, suspended from above, and a Signorini tourniquet. Digital compression was made over the femoral artery, as it passes over the pubic bone, and this was supplemented by the tourniquet or weight placed upon the superficial femoral artery. The compression, which was continued for ten hours, was changed in method only as made necessary by discomfort of patient and attendants.

Throughout the entire operation, the aneurism was under constant surveillance, and whenever pulsation was perceived the compression was so adjusted that the throbbing ceased. The pain and discomfort of the operation were borne by the patient without anodyne or hypnotic.

At the end of the ten hours' compression, very little pulsation in the aneurism was to be felt. The tumor was smaller and harder than before the operation. Flexion at once was resumed and continued for twelve

days. At the end of this period, a cure not having been accomplished, patient was again subjected to compression, but no weight was used. As before, relays of operators kept up digital compression—this time for twelve hours. The tourniquet was also used. The result was not entirely satisfactory, and after keeping the leg flexed for two weeks more, the same operation was undergone for the third time. The duration of the treatment this time was twelve hours. Four days after, the tumor still pulsating, though feebly, compression was once more tried for half a day. No tourniquet was used this time, but digital compression alone employed. There were relays of operators of about fifteen minutes each. The report of the day following says that the aneurismal tumor was without pulsation, hard, and very small. An elastic bandage was put on the leg, and continued up beyond the tumor, and the patient was permitted to go home for a few days; but the tumor began to pulsate once again.

On September 14, seventy days after entering hospital, patient was called back to hospital, it being thought probable that the Hunterian operation would be a necessity. With no small gratification, the tumor appeared small, hard, and without the slightest tremor of pulsation. On the same day, patient was discharged, cured.

Two months after leaving hospital, patient reports that since date of departure he has never observed any pulsation in tumor, which is very small and difficult to find. He has worn an elastic bandage most of this time. He has returned to his work.

REMARKS.—The above case shows a cure resulting from compression persistently employed. Compression in all its forms was tried—flexion, direct compression by compress, digital compression, instrumental compression, and, finally, the rubber-bandage.

The duration of the treatment, although longer than many cases treated by digital compression, had, we think, in this case, not a little to do with the successful issue; for sufficient time was allowed for dilatation of vessels; for the conveyance of collateral circulation; time also was allowed for laminæ formation in the sac, which formation was eventually to close its cavity.

Attention is called to the fact that the patient comprehended the *rationale* of the treatment, and intelligently assisted it in every particular. It is noteworthy that there was an absence of unpleasant symptoms; that no medicine was administered; and that full diet and good health were preserved during the treatment.

MEDICAL PROGRESS.

PILOCARPINE IN SEVERE HICCOUGH.—DR. RUHDORFER, in the *Allg. wien. med. Zeit.*, No. 38, 1883, reports a severe case of the above, lasting for three months, and which morphia, given hypodermically, could only check for a few hours or days. It resisted all the usual remedies, such as quinine alone and with extract of belladonna, tincture of castoreum, or tincture of valerian, in water or with aromatics, mustard poultices over the stomach, dry cuppings down the spinal column, chloroform, ether, zinc, bismuth, numerous emetics and purgatives. The patient dragged on for three months under various remedies, morphia being administered whenever a single attack lasted beyond eight hours. At last the attack became overpowering, and the hiccough was so loud that the patient could be heard outside the house, through two doors. She sat up in bed, supported by her parents; there were dyspnœa and cyanosis, the head was jerked in all directions, the pulse was small and frequent, the neck was distended. Remembering a case in the *Revue Médico-Chirurgicale*, Dr. Ruhdorfer injected a solution of pilocarpine hydrochlorate (three centigrammes in a gramme of water; gr. ss–ℿxv). The hiccough was at once cured, as if by magic, and has never returned since.—*British Medical Journal*, Nov. 17, 1883.

THE CURE OF HYDROPHOBIA.—GINGEOL has recently made a communication to the Académie de Médecine of Paris on this subject, with the following conclusions: 1. There is reason to believe that clinical experience will verify the opinion as to the good effects of hoang-nan in the treatment of hydrophobia. 2. The oriental practice, which consists in administering the drug per orem, should be rejected on account of the dysphagia and the eventual vomiting. 3. The drug can be better administered by the subcutaneous injection of an aqueous solution—1 to 10—of the alcoholic extract, or an alcoholic acetous preparation, every ℿxv of which represent probably the active principle of three of the pills recommended, and given by Tong-King. 4. The maximum dose of the preparation can not be formally indicated, but must depend upon the indications.—*L'Indipendente*, November 15, 1883.

THE ACTION OF CHLORATE OF POTASH.—M. MERING has recently made some experiments on this drug, basing his results on recent researches. He draws the following conclusions:

1. Chlorate of potash traverses the organism for the greater part, without undergoing any alteration.

2. In a mixture of blood and chlorate of potash, methæmoglobine is formed; at the same time a part of the chlorate of potash is reduced.

3. The addition of an alkaline base retards decomposition of the blood; addition of carbonic acid accelerates that decomposition.

4. Chlorate of potash causes more rapid decomposition in non-oxygenated blood than in arterial blood.

5. The deleterious action of chlorate of potash is manifested principally when the salt is absorbed by an empty stomach, and when its elimination is insufficient. —*Gaz. Méd. de Paris*, November 17, 1883.

THE CHANGES IN THE SPINAL CORD AFTER ARSENIC, LEAD, AND MERCURY POISONING.—DR. N. POPOW, after a number of experiments on this subject in the clinical laboratory of Prof. Mierzejewsky, with subsequent microscopic examinations, draws the following conclusions:

1. Arsenic, lead, and mercury, produce marked changes in the cord in acute cases of poisoning, which must be regarded as having the character of acute central myelitis.

2. In proportion, as the cases are protracted, these changes are not merely confined to the gray substance, but invade the white substance of the cord and produce changes similar to those seen in a diffuse myelitis.

3. The peripheral nervous system is completely unchanged by a rapid action of these poisons.

4. The clinical symptoms on the part of the nervous system, observed during rapid poisoning by these substances, *e. g.*, cramps, paralysis, pains, and anæsthesia, are fully explained by the morbid changes found in the spinal cord; and no one of these symptoms can be attributed to an affection of the peripheral nervous system.—*Virchow's Archiv*, Bd. xciii. Heft. ii.

PARACENTESIS OF THE PERICARDIUM.—DR. J. W. MACDONALD read the report of this case before the Canada Medical Association.

He was called to see the patient, a married woman, aged 30, on the evening of June 10, 1883. She stated that, three weeks previously, she had been seized with

severe pains in the joints, attended with high fever. A day or two afterwards, she complained of pain and violent beating at the heart.

Condition on June 10th: She was unable to lie down with comfort; the face was pale, anxious, and slightly œdematous; the breathing was short and panting; the heart's action tumultuous, and its movements could be perceived through her clothing. On examination of the chest, a dull area was found over the præcordial region, extending from the right edge of the sternum towards the left for about eight inches, and from the seventh intercostal space to the level of the upper margin of the second rib. A loud and distinct to-and-fro murmur at the apex, and a harsh systolic murmur at the base, were the sounds heard on auscultation. The lower lobe of the left lung, posteriorly, was very dull on percussion, and conducted the heart-sounds, so that the murmurs could be very distinctly heard in this situation. Over this area, there was also puerile respiration and increased vocal resonance. A narrow strip, giving normal sounds on percussion, extended down the side from the axilla, and divided the dull areas in the front and back of the left chest. The pulse was small, irregular, and 120 per minute. She was troubled with diarrhœa.

Blisters, iodine, and diuretics were employed, and for a few days the fluid diminished; but the symptoms became aggravated, and the dyspnœa and agony about the heart became unbearable. To use the patient's own words, she felt, "as if the heart was going to burst." She could get no rest except when propped upright, and she frequently fainted. The diarrhœa continued, and, in the hope that it might promote absorption of the effusion, he made no attempt to check it.

On June 18th, he resolved to operate, a point one inch below the nipple, and close to the lower margin of dulness, being fixed upon: first, because no heart-impulse could be felt there; and, second, because it was at the most dependent part of the pericardial cavity. The patient was placed in a semi-recumbent position; chloroform was very cautiously given; and the mamma was held up out of the way. He then made a preliminary incision through the skin, and dissected down carefully between the ribs. No impulse being felt by the finger in the wound, he pushed a moderate-sized aspirating-needle through the remaining tissues; and, feeling that he had entered the cavity, withdrew the stilette. A few drops of greenish-looking fluid escaped; but it appeared impossible to get it to run freely, even after applying the aspirator. Just as he was preparing to enlarge the opening, for the purpose of introducing a tube, the fluid began to run freely; and, on the patient drawing a full breath, it escaped in little jets. After persevering for some time, the cavity was emptied; the dull area over the heart was reduced to its normal size; and the patient, though extremely weak and inclined to faint, was very greatly relieved. The fluid withdrawn measured thirty-two ounces; was of a greenish color, resembling bile; and tended to coagulate on cooling. Shortly after the operation, she could lie down with comfort on either side, and draw a deep breath without inconvenience. The pulse fell to 100, and became more firm and regular.

The patient recovered rapidly.—*British Medical Journal*, October 27, 1883.

ACCESSORY SUPRARENAL CAPSULES IN THE BROAD LIGAMENTS.—MARCHAND has encountered six cases in new-born infants, in which there were accessory suprarenal capsules in the broad ligaments. They were in the form of small yellow bodies, rounded, and situated in the thickness of the broad ligament, near its free border in the vicinity of the ovary. They measured from one to three millimetres in diameter. In one case there were two of these bodies near together. That they are really adrenals is recognized by their histological structure: They are seen, on examination, to be made up of layers of epithelioid cells separated by vessels joining in a common trunk. The pigmentation of the suprarenals, however, is absent. The existence of similar elements may be explained by the vicinity of the suprarenal capsules relatively well developed, and the communication with the embryo of the internal spermatic or ovarian vein.—*Virchow's Archiv*, Bd. xcii. Heft 1.

PORRO OPERATION.—On September 30th, PROF. M. FRARI performed a Porro operation at the Instituto Ostetrico at Padua, on account of rachitic deformity. The patient died of septic peritonitis on the seventh day. The child, well developed, was saved.—*L'Indipendente*, November 15, 1883.

THE HEREDITARY FORM OF DIABETES INSIPIDUS.—At the fifty-sixth session of German naturalists and physicians, DR. WEIL, of Heidelberg, presented the genealogical tree of a family of 91 persons, of whom 70 had come to adult life, and of these 23 were affected with diabetes insipidus. Of the 23 persons, 5 have died, one lived in America, and 17 were examined by Weil. There is no other hereditary disease in the family, the members of it being generally of robust constitution, and often live to a very advanced age. The grandfather lived to the age of eighty-three; one of his daughters to seventy-four; and two others to sixty-six and sixty-five.

Of the seventeen diabetics, five are aged from thirty-nine to sixty-six; two others are twenty and thirty years of age; six are from ten to twenty, and four between two and eight. All are in perfect health except for their insatiable thirst and abundant urinary secretion. The quantity of urine passed in twenty-four hours by the younger members of the family (under thirteen years of age) is between two and two and a half gallons. One, aged 42, passes about five gallons. The appetite of these persons is normal, and the digestion regular. None of them present any nervous or genital troubles. In all those affected by polyuria, the symptoms begin in infancy, attaining their maximum towards the age of twenty years, and then diminish after the sixtieth year. This polyuria persists until death; its duration, then, is undetermined, and its prognosis very favorable, unless complicated by some disease of the general health.

In answer to certain questions, Dr. Weil said that the heart and vessels were perfectly normal, that only one was addicted to alcoholic liquors, and that moderately, and that it was impossible that the affection could be due to imitation, as the disease began in early infancy. and did not affect all the members of the family. None of the subjects had succeeded in conquering the thirst by habit or force of will. One only had been treated; ergot had diminished the thirst and urinary secretion, but the patient felt the worse for it.—*Gazette Méd. de Paris*, October 27, 1883.

TARTAR EMETIC IN EPISTAXIS.—GUEDEVO has published two cases of rebellious epistaxis which were relieved by tartrate of antimony and potash. The usual remedies had been tried in these cases without any good effect, when the following mixture was resorted to: ℞.—Tartrate of antimony and potash, gr. ij; distilled water, f℥iv; simple syrup, f℥vj. Sig. Take a teaspoonful every fifteen minutes until vomiting is produced. After more or less vomiting the hemorrhage ceases.—*L'Indipendente*, November 15, 1883.

THE MEDICAL NEWS.

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OF MEDICAL SCIENCE.

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SATURDAY, DECEMBER 8, 1883.

REPORT OF THE FRENCH CHOLERA COMMISSION.

IN our issue of November 10th, we presented the substance of the preliminary report of the German Cholera Commission. At the meeting of the Biological Society of Paris, held upon the same day, M. Straus reported for himself and his co-laborers—Roux, Thuillier, and Nolacq—the results of their researches in Egypt upon the nature of cholera.

Twenty-four autopsies were made—seventeen on men, and seven on women—immediately after death. The Commission confined itself to the study of the intestinal fluid, the walls of the intestines, and the blood. The minute examination of the intestinal walls, stained by methylene blue, showed a large number of micro-organisms (bacilli and micrococci), bacilli resembling those of tuberculosis. But these were not constant, and it was impossible to make any pathogenic studies. Nothing special was found in the mesenteric ganglia, the liver, spleen, or kidneys.

The most important results were obtained from the study of the blood. The dark color and defective coagulation of the blood were immediately conspicuous. Either the globules subsided leaving a clear supernatant serum, or, if coagulation took place, it was slow, and the coagulum was like a soft jelly. Microscopically examined, the red disks were spread out, pale and non-coherent; the white corpuscles were numerous, and very granular. Further, there were seen in the clear spaces between the blood globules, certain small elongated bodies, suggesting those of the acetic ferment, and like those of pig cholera, but less elongated. These were found in the blood of the twenty-four subjects examined, and were particularly abundant in the mesenteric and abdominal veins. The attempts to stain these micro-organisms were unsatisfactory; for not only did they take color badly, but their extreme minuteness made it difficult to distinguish them from the débris of white corpuscles and the precipitated particles of coloring matter. At a temperature of 100.4°, and in tubes of blood, these elements proliferated, sometimes in groups and chains, and always at the bottom of the tube, protected from the action of the air.

The Commission are inclined to consider that they have found in this micro-organism the microbe of cholera; although they admit that the only proof of such view, viz., the successful cultivation or inoculation of the organism, is still wanting. Cultures were attempted with all sorts of culture-fluids, and were alike unsuccessful. Inoculations, subcutaneous and intravenous, the introduction of fluids containing the organisms into the intestinal canal, all failed, in whatever animal employed, including the mouse, which is supposed to be peculiarly disposed to acquire the diseases of man. On the other hand, the Commission feel that failure in these experiments does not exclude the possibility of the microbe in question being that of cholera. The suitable culture may not yet have been found, nor the animals susceptible to the germ. The microbe of malignant pustule resisted for years the most patient researches of the best observers.

Another fact noted by the Commission was the reaction of the blood of choleraics, as determined by testing the serum which separated from the globules when the blood was placed in tubes. This was found to be slightly acid in the majority of cases. And in an autopsy made half an hour after death, the pericardial fluid was also found to be acid, while the blood of subjects dead of other causes presented no such reaction.

A comparison of these results with those of the German Commission reveal wide differences. But ten autopsies were made by the latter. The blood was found free from micro-organisms, which were, however, found in small numbers in the vomited matters, and were numerous in the dejecta. On the other hand, the organism to which most importance was attached—a bacillus resembling in size and shape most nearly that of glanders—was found in the intestinal wall, in which, apparently, nothing distinctive was found by the French Commission. Both Commissions failed in inoculation experiments.

It is evident, from these most diverse results, that our knowledge of pathological mycology and its investigation is still far from that preciseness which will allow us to attach any great value to observations by whomsoever made, and upon whatsoever

disease, except, probably, the parasitic skin-diseases, and one or two only of the infectious diseases—malignant pustule and relapsing fever.

WIRING THE FRACTURED PATELLA.

IN the issue of THE MEDICAL NEWS of last week, we called attention to the treatment of fracture of the patella by wiring the fragments, and analyzed all the cases which had fallen under our notice, with a view to pointing out the dangers of the procedure. Since then we have received the London weeklies of November 17th, from which it appears that important debates upon the subject have been held at the Medical and Clinical Societies of London, with the result of eliciting the opinions of many of the leading surgeons of the great metropolis as to its merits. In France, too, as we learn from the *Gazette Médicale de Paris* for November 17, and the *Union Médicale*, for November 15, the antiseptic suture of the patella was discussed at the Société de Chirurgie. The most comprehensive papers upon the subject are those of Mr. Turner, which was read at the Clinical Society of London, and which may be found in the *British Medical Journal*, for November 17, and of Mr. Macewen, of Glasgow, which is published in the *Lancet* for the same date. In these contributions, and in the discussion at the Société de Chirurgie, are contained 37 cases which were not noticed in our own columns. Our present objects in again calling the attention of our readers to the subject are, first, to add the new cases to those we have already analyzed, in order that they may reach a definite conclusion as to the risks of the procedure, and, secondly, to present the opinions of the gentlemen who took part in the discussions, in favor of or adverse to the method.

The patella has been sutured antiseptically 86 times, the surgeons having been Lister in 7 cases; Bell, Howse, Kœnig, and Macewen, each in 4 cases; Bloxam, Rose, Johnson Smith, Trendelenburg, and Wood, each in 3 cases; Cameron, Davies-Colley, Jessop, Rosenbach, Wheelhouse, and Schede, each in 2 cases, and Amphlett, Beauregard, Bryant, Bull, Cagnoli, Dicken, Fowler, Gœring, Golding-Bird, Hartwick, Holderness, Holmes, Sydney Jones, Langenbeck, Langenbuch, Lauenstein, Lloyd, Lucas-Championnière, MacCormac, Metzler, Parker, Pemberton, Poncet, Pozzi, Pye, Sabine, Schneider, Henry Smith, Socin, Teale, Timme, Turner, Uhde, Van der Meulen, Wahl, and Wyeth, each in 1 case.

In the single cases of Bull, Dicken, Sydney Jones, Holmes, MacCormac, Pye, Turner, Von Langenbeck, and Wyeth, in 1 of Bell's, in 1 of Bloxam's, in 1 of Rose's, and in 1 of Wood's, in Schede's 2 cases, in 2 of Kœnig's, and in the 3 cases of Johnson Smith, the joint suppurated. Of these, the case of Bull died of exhaustion and, probably, pyæmia; that of Wood died of pyæmia; those of MacCormac and Von Langenbeck died of septicæmia and pyæmia, after amputation of the thigh; and the case of Wyeth recovered after amputation of the thigh. The remainder got well with stiff joints. In the case of Wahl, there was partial necrosis of the upper fragment, and in one of Kœnig's, the upper fragment perished. To these ill results must be added the death of Fowler's patient from carbolic acid poisoning.

The statistics of the operation demonstrate, therefore, 23.2 per cent. of suppuration of the knee-joint; 5.8 per cent. of deaths; 2.3 per cent. of necrosis of the fragments; and 3.5 per cent. of amputation of the thigh, results which clearly indicate that the procedure does not warrant the enthusiastic estimate that Mr. Lister has placed upon it, and that it will not replace other safer methods of treatment.

The supporters of the operation are, in addition to Lister, Turner, Royes Bell, Bloxam, Macewen, and Cameron. Adams and Lucas-Championnière approve of it when practised by surgeons who are best experienced in antiseptic measures. Chauvel, Forget, Gilette, Holmes, Heath, Sydney Jones, and Morant Baker think it justifiable in some old cases in which the limb is useless, but they condemn it in recent cases; while Bryant, Gant, Morris, Owen, Verneuil, Le Fort, Richelot, Desprès, and Labbé do not consider it justifiable under any circumstances. Our own view is that it should be restricted to cases in which ordinary measures have failed to secure union, and that it should only be done, under these circumstances, by those who have had a large and successful experience in aseptic surgery.

ADVERTISING DOCTORS.

DOCTORS who advertise may be classified like objects in natural history. There are doctors who advertise outright and make a merit of it. They are derisively called "quacks," but they are honest quacks, and fly their own flag. There are doctors who advertise indirectly, and obtain any advantage they can in this way, without sacrificing their professional status, and who live within the letter of the Code of Ethics, if they ignore its spirit. There are, still, voluntary and involuntary advertisers—those who deliberately glorify themselves in the public prints, and those who are victims of circumstances, and are displayed in the loudest type without any agency of their own.

In a recent issue of *The Medical Times and Gazette*, of London, a leader devoted to the subject of "Medical Bulletins," declares that the prejudices existing in England "against medical men adver-

tising themselves," may be "doomed to disappear as our institutions become more Americanized." Nothing could be more unjust. The great body of the medical profession in this country is, and has always been, immovably opposed to open or covert advertising on the part of its legitimate members. It is true the offenders have not always been disciplined, especially those who under the guise of official positions have paraded their wares before the secular public; but their conduct has none the less been severely reprobated by the great mass of medical men. There are some kinds of indirect, but quite voluntary, advertising difficult to reach by any tribunal but the common sentiment of the medical profession.

A very opportune illustration of this fact is afforded by the recent action of the Mobile Medical College. Coming into possession of a hospital, the faculty have issued a circular, setting forth the skill of their members and offering gratuitous service to the sick-poor of the State. In this case both the letter and spirit of the National Code are violated—for the claims of special skill made in the public prints, and the offer of gratuitous service, are alike condemned. These professorial advertisers evidently hope for immunity from the usual disciplinary results of such acts, because "the College" is the offender. As it is a fiction of the English law—"the King can do no wrong," so these gentlemen hope that "the College" may occupy before the profession a similar unassailable position. If a Mobile physician may not send broadcast through the State a circular offering his services as a specialist possessed of the highest skill, and agreeing to treat the sick-poor gratuitously (they must write and hear something to their advantage, before coming, however!), why should six or eight medical men, composing a College faculty, be permitted thus to violate the Code and offend the sense of professional fitness?

That form of advertising which we have called indirect, is practised to no small extent. Only a few days ago, in the columns of a New York daily, an eminent New York surgeon appears as the performer of a remarkable surgical operation, which is so described that the hand of a medical reporter can readily be traced. This eminent surgeon will, no doubt, indignantly deny his agency in the matter; but has he not some indiscreet follower, who gathers a precarious subsistence by piping up the achievements of his patron? Very recently, one of the papers of Philadelphia contained a glowing description of a private, special hospital; but the motive for this humanitarian recital was seen in the account of the medical engineer of this establishment, whose remarkable achievements in dermatological science were told in such extravagant phrase that only the insensibility of some pachydermatous animal could support the absurd flattery without collapsing. If such offenders are brought to book, we all know the defence: regret that such an unfortunate publication should have appeared; totally unauthorized; no one feels the impropriety more than the person concerned, etc. All this, and more, when the matter is given to the reporter by some attaché of the advertised great man, who, if he does not approve publicly, is secretly gratified. Much of this indirect advertising is done by reporters, who repay in this kind of cheap notoriety for services rendered.

It must be admitted that there are members of the profession who are advertised quite involuntarily, and pose in attitudes for which they have no liking. A high position, fairly won, may seem a justification for newspaper notice; but every right-minded physician must feel that such cheap applause rather hurts than helps, for through it all lurks the suspicion of contrivance or connivance.

MORAL.—In this eager striving for notoriety rather than the just honors of the medical profession, do we not discern the need of maintaining a high standard of ethical requirement? Abate in any respect our regard for the proprieties of professional life, and see the consequences. Remove one stone, and the whole edifice tumbles about our ears. Allow these forms of advertising to obtain a footing of the slightest tolerance, and the newspapers will not have space enough to accommodate the multitude eager to display their wares. What, then, will be the position of the medical profession?

But, says the *Medical Record*, "the triumph of the New Code shows that medical men are growing more liberal as to interpretations of professional conduct, and that of itself is a good sign."

INJECTIONS INTO THE UTERINE TISSUE.

DR. SCHÜCKING proposes to treat certain maladies of the uterus by injecting the medicament directly into the substance of the organ. We believe that this expedient, which he brings forward as new (*Berliner klin. Wochen.*, No. 27, 1883), has been often employed in this country. The advantages of this method are two: it is local; it causes much less pain than subcutaneous injections. The remedies so employed are ergotin, Fowler's or Pearson's solution of arsenic, tincture of iodine, carbolic acid, and some other agents. The principal diseases thus treated, are subinvolution, chronic metritis, fibroids, and some forms of displacement. For the performance of this operation the ordinary hypodermatic syringe suffices, but the needle must have the necessary length to reach through the speculum into the uterus. Only concentrated solu-

tions are suitable, since the tissue of the organ is too compact to admit more than a few minims.

That this method is not a mere fancy, is proved by its employment in this city at the present time. We happen to know that a competent and enterprising female physician is using in this way a solution of carbolic acid, five per cent. in strength, for the relief of uterine cancer. The solution is freely injected into the tissue immediately subjacent the cancerous mass. Too short a time has transpired to permit any opinion as to the ultimate result of this method. It has, however, removed the very severe pain which the poor patients were suffering.

ANTISEPTIC SURGERY.

IF additional proof of the value of antiseptic over old methods of managing wounds were needed, it would be found in the results obtained by Professor Bruns, of Tübingen, and published in a recent brochure. Of one hundred and forty-nine amputations performed between 1877 and 1882, only 5·5 per cent. proved fatal. During that period, amputation of the leg was attended with a mortality of 3.2 per cent., and of the thigh of 2.5 per cent. From 1843 to 1863, or in preantiseptic days, the same operations showed, respectively, a mortality of 29.7 and 43.5 per cent.

Equally striking results were obtained by Professor Esmarch, of Kiel, in 92 resections of the knee done between 1857 and 1882, of which a full account may be found in an inaugural dissertation by Dr. Mensing. Of 21 cases treated in accordance with old methods, 14 recovered, and 7, or 33.3 per cent., perished. Of 23 cases managed with Lister's dressing, 21 recovered, and 2, or 8.7 per cent., died. Of 48 cases treated with the antiseptic dressing of Neuber, 47 recovered, and 1, or 2 per cent., perished. In other words, the mortality of antiseptic resections was 4.2 per cent. as against 33.3 per cent. for non-antiseptic operations.

INFECTIOUS NEPHRITIS.

INFECTIOUS nephritis is the title given to that form of nephritis which is often found associated with erysipelas of the face. It has, of course, long been known that albuminuria is a frequent accompaniment of erysipelas, and although it has always been looked upon as a rather grave symptom, it formerly had no more stress laid upon it than the albuminuria of other acute diseases, as, for instance, typhoid fever and the eruptive fevers.

Since the discovery by Hueter and Nepveu, in 1868, of a microbe of erysipelas, and its more recent recognition in the blood, in the fluid of the blisters, and in the urine of erysipelatous patients, this albuminuria has been allowed a greater significance. It is now an acknowledged sign of infectious nephritis.

In an inaugural thesis recently published, DR. JULES BLEEHMANN has taken up this subject, and, in addition to tracing the history of the urinary symptoms in erysipelas, has added some personal experiences, and has described the lesions and the progress of the erysipelatous nephritis. Throwing aside all other theories which have been suggested, he ascribes the nephritis to the irritant action of the poison germs upon the tissues of the kidney.

That the albuminuria accompanying erysipelas is a part of a nephritic process we satisfied ourselves as far back as 1872. The bloody urine and the epithelial and blood casts could scarcely receive any other interpretation. In view of the recent disposition to ascribe all of the inflammatory processes constituting a part of infectious diseases to a minute organism, it is to be expected that infectious nephritis should be referred to a similar origin. That it may be due to some irritating constituent of the blood in the infectious disease, just as the nephritis of scarlatina is caused by its poison in the circulation, is a very reasonable supposition. But that it is due to a microbe has not, in our judgment, been proved, and so to assert, with the present evidence, is begging the question.

TRANSFUSION OF BLOOD BY HYPODERMATIC INJECTION.

OUR Italian *confrères* have manifested much ingenuity in devising methods of transfusion. The most recent contribution made by them to this subject is transfusion hypodermatically. Thus DR. PALADINI has reported a case in which complete success followed the injection under the skin of the abdomen of about 130 grammes or four ounces of blood. The case was one of menorrhagia, the patient losing so much as to faint repeatedly, although recumbent. The husband of the woman furnished the blood. By means of a hypodermatic syringe the blood was drawn from the veins of the donor, and was injected through the canula of a trocar previously introduced, and by means of which a cavity was hollowed out in the connective tissue to receive the blood. The blood-tumor thus formed disappeared in two hours, and neither induration nor abscess was produced. The hemorrhage ceased, the patient took food, and the night following slept tranquilly. The subsequent recovery proceeded without accident.

THE UNSANITARY CONDITION OF CLOSED SUMMER RESORTS.

GREAT evils result at many summer resorts from the way in which hotels and boarding houses are closed and left. There is generally no attempt at house-cleaning. All manner of trash is left in the cellar; pieces of meat lying on the kitchen range,

and unwashed towels in the scullery; fruits and vegetables, partly decayed, are scattered here and there. As a rule, the tenant leaves as soon as he can after evacuation day, and makes no attempt to put the house in sanitary order. So long as this plan is followed, the outside cleaning by city boards of health will not be enough. The house-cleansing and carpet-sweeping company must do its work in the autumn.

REVIEWS.

EPITOME OF SKIN DISEASES, WITH FORMULÆ, FOR STUDENTS AND PRACTITIONERS. By the late TILBURY FOX, M.D., F.R.C.P., and by T. COLCOTT FOX, M.B., M.R.C.P. Third American edition, revised and with additions. By T. COLCOTT FOX, B.A. (Cantab.), M.B. (Lond.), etc. Duod. pp. 240. Philadelphia: Henry C. Lea's Son & Co., 1883.

FOR the busy practitioner who cannot give that time to the study of skin diseases which is necessary to master the subject, such manuals as the present have their use. And while we consider this and all similar works little less than pernicious for the medical student, we can cordially recommend Fox's *Epitome* to those graduates whose time as well as knowledge is limited, and who wish a handy manual to lie upon the table for instant reference in the hour of need. Its alphabetical arrangement is suited to this use, for all one has to know is the name of the disease; and here are its description and the appropriate treatment at hand and ready for instant application.

The present edition has been very carefully revised by the surviving author, and a number of new diseases are described, while most of the recent additions to dermal therapeutics find mention; and the formulary at the end of the book has been very considerably augmented.

THE PHYSICIANS' VISITING LIST (Lindsay & Blakiston's) FOR 1884. Thirty-third year of its publication. Philadelphia: P. Blakiston, Son & Co.

THAT the *Physicians' Visiting List* has reached its thirty-third year of publication is ample evidence of the high favor with which it is regarded by the profession. In its issue for 1884, it retains all the features which in past years have conduced to its popularity. The posological tables have been revised in accordance with the new Pharmacopœia, and there have been added a list of new remedies and a description of Sylvester's method of artificial respiration. This visiting list fully meets the requirements of the busy practitioner.

SOCIETY PROCEEDINGS.

NEW YORK COUNTY MEDICAL SOCIETY.

Adjourned Annual Meeting, November 26, 1883.

THE PRESIDENT, DAVID WEBSTER, M.D., IN THE CHAIR.

THE minutes of the Annual Meeting held October 22d having been read and approved,

THE REPORT OF THE COMMITTEE ON HYGIENE,

DR. S. OAKLEY VAN DER POEL, Chairman, which had been postponed from the annual meeting, was read by the Secretary, Dr. W. M. Carpenter.

It consisted of four parts, of which the first was a paper by EDWARD G. JANEWAY, entitled,

MORTALITY TABLES AND EPIDEMIC INFLUENCES.

The following extracts embody its more important points: The mortality for the nine months of the year ending on September 30th, has been less than in the corresponding periods of the years 1881 and 1882. It has, however, been somewhat greater, both absolutely and comparatively, as regards increased population, than that of the same period in the years 1878, 1879, and 1880. The work of systematic vaccination was commenced in 1875, and continues at the present time. Previously, spasmodic efforts were made when an epidemic was prevailing. Since that time the corps of the Board of Health charged with this work has performed 119,856 primary and 430,783 re-vaccinations, a total of 550,549. The work was initiated when a very severe epidemic of smallpox had already gained considerable headway. Aided by prompt action in removal, isolation, and disinfection, where the disease has shown itself, as well as by thorough vaccination and watching of the people in the neighborhood of the outbreak, the Board of Health has been able to hold the disease in check on the two occasions when it has since developed. There have been 780 deaths from smallpox since the end of the epidemic in 1877, a period of six years, a number of them in recently arrived immigrants. Without taking into account the fact that the city has trebled its population in the time comprised in this table, the mortality from smallpox is only one-half to one-fourth of what it was in any preceding six years, except between 1866 and 1871. Had the same mortality prevailed as in the years following 1848, instead of 780 deaths in the six years terminating with 1883, we should have read 7500. In other words, 6500 people have been prevented from dying of smallpox. Should some one object to the method of arranging the years, let him do it as he will, and yet he will find ample evidence of a strong disturbing influence operating against the development of smallpox since 1866, the year in which the Health Board was organized, and especially since 1875, the year in which a permanent corps was detailed to do this work constantly, and as vigorously when no epidemic existed as when one was present. Physicians should ever urge on this work, since, when smallpox has only prevailed to the limited extent of the six years just ending, people become careless, and persuasive vaccination by public authority becomes difficult. It is far more essential to keep up thorough vaccination now than to wait for the visitation of another outbreak of the disease, which will find its victims in the careless and obstinate.

We have commented so freely in previous years upon the statistics and their indications, that we shall dwell but briefly upon some facts which we deem of importance to keep before the physicians of this city. The tables show at a glance the fluctuating character of the mortality from measles, scarlet fever, and diphtheria; from which it seems probable that, owing to the moderate number of deaths from scarlet fever this year, we shall witness next year a marked increase of this disease; whereas, for measles, the probability is that there will be a considerable diminution. Diphtheria is on the decline, and from the previous course of the disease it is probable that this diminished mortality may continue for another year or more.

Pneumonia has produced 41 less deaths than last year, but 235 more than in 1881, and 634 more than in 1880. Bronchitis, however, has caused fewer deaths than either in 1881 or 1882. Consumption, on the other

hand, caused 35 more deaths in 1882 than in 1881, and 59 more deaths in 1883 than in 1882.

The summer was so comfortable that we find a comparatively moderate mortality from diarrhœal diseases. Yet we observe that the mortality from this class of disorders is 2363 less during the last six of these twelve years, notwithstanding the increase of population by 300,000 during the time comprised. As 1872 was an exceptionally hot and fatal summer, it seems as if an unfair conclusion might be drawn from including it. We can gain a better idea by comparing 1873 and 1881, both comparatively cool summers. In the latter of these years, 16 more deaths occurred than in the former; yet the population had increased 225,000, in round numbers, and should have led us to expect an increase of 730 in the mortality. No one is more aware than the writer of the fallacies liable to occur in comparing vital statistics; yet he feels that, making all due allowance for possible error, a considerable number of lives have been saved by the result of the employment of the summer corps of the Board of Health and of the active charity of New York City.

Mortality for the Three Quarters of the Years.

From	1872	1873	1874	1875	1876	1877	1878	1879	1880	1881	1882	1883
Measles.	428	251	299	116	340	119	258	126	462	347	826	634
Scarlet fever.	802	726	730	410	693	781	740	1370	277	1379	1959	648
Diphtheria.	269	681	984	1646	1427	616	726	453	743	1658	1247	758
Croup.	406	492	390	519	366	308	365	295	546	765	559	454
Whooping cough.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Typhoid fever.	264	219	176	256	207	179	155	122	163	287	229	294
Typhus fever.	73	30	9	22	18	15	4	3	1	156	63	10
Cerebro-spinal fever.	.....	.....	.....	.....	.....	.....	.....	84	131	401	197	184
Malarial fevers.	.....	.....	.....	.....	.....	.....	.....	299	341	451	403	411
Pneumonia.	1654	1734	1802	2149	1955	1627	1740	1845	2022	2421	2697	2656
Bronchitis.	.....	.....	.....	.....	.....	.....	869	892	941	1096	1218	1072
Phthisis.	3231	3138	2941	3174	3159	3029	3296	3206	3440	3908	3943	4002
Diarrhœal diseases.	4691	3740	3153	3446	3565	3235	2630	2670	3648	3756	3642	3121

Typhoid fever has made no very marked change in the past three years. The outbreak of typhus fever which began in 1881 seems terminated, as only 10 deaths have occurred from this cause during the present year. He who looks at the number of deaths which took place from this disease when it gained an entrance in New York in past years will again see the value of an actively interfering agency to prevent the spread of disease. But for the efforts of the Board of Health, the disease would have spread greatly and extended over a number of years. Instead of a mortality of 225 in the outbreak of 1881–1883, there might have been a proportional increase, according to population, over what occurred in 1848 and the following years, when more than 4500 persons died of the disease: the equivalent of which would be over 10,000 for the present time. Judging from the annals of the past, a battle in which 10,000 persons were slain would now be commemorated in history; a battle, in which perhaps more than that number of lives were saved from destruction by pestilence, is a matter not deemed of any special moment. The moral of this is, that the medical profession of New York should see that its Board of Health is properly maintained, aided, and encouraged in its work. At times in the past physicians have, from neglect or concealment, failed to notify the Board of the existence of contagious diseases, with the effect of producing an epidemic in some cases. One case of a contagious disease may seem a little matter; but, as a single spark may cause a great conflagration, so this may be the means of initiating a great epidemic. Smallpox and typhus fever are well under control at present. Let each physician who would be inclined to treat a case of either of these diseases, reflect on the possible consequences should he endeavor to do so without reporting the matter to the Board of Health. In the writer's opinion, he would be more guilty than the man who commits a simple murder. For the sake of a fee or the good-will of a family, he would take the chance of endangering a community.

The second paper was by DR. O. D. POMEROY, on

SOME POINTS IN THE HYGIENE OF THE EAR.

Some of the points touched upon were the following: To those not in good general condition there was danger of ear trouble in riding fast in the wind, and this danger was increased if the air was damp. Otitis was not infrequently caused by sea bathing, in which it might be due simply to the application of cold water, or to the violent concussion of a wave, or the irritation caused by the entrance of salt water into the nostrils or the mouth. The wearing of cotton in the ears by bathers was recommended. Bathing in the unclean water about New York City, the writer thought, sometimes gave rise to inflammation of the ear. The bad effect of loud and continuous sounds was well shown in boilermakers' deafness, in regard to the exact production of which, however, some discussion was now taking place among otologists. Railroad engineers, ship-caulkers, and telegraph operators, were all more or less subject to ear trouble. Musical sounds, however, never seemed to produce this; monotonous and discordant sounds being required. The discharge of firearms might cause deafness, either by creating such a compression of air as to rupture the membrana tympani, or by the shock to the acoustic nerve, and it was recommended that those exposed to this danger should hold the mouth open. Having spoken of the pernicious effect of compressed air upon the auditory apparatus, the writer passed on to the evils arising from violence to the external ear. Boxing on the ear was a frequent cause of deafness, and pinching and pulling upon it might result in malignant disease where there was a predisposition to it. Sunstroke occasionally impaired the hearing. Syringing with warm water was the best treatment for impacted cerumen.

The next paper was by DR. STEPHEN SMITH, and was on

EMANATIONS OF SEWER GASES.

The very important subject of ventilating sewers, he said, had been altogether too much neglected. In New York the Department of Public Works had adopted a system of doing this, which not only filled the dwellings and schools, but saturated the very streets with the noxious vapors so productive of filth diseases, which everybody desired to avoid as much as possible. Connecting with the sewers was a series of perforations, or man-holes, by means of which the sewer gas escaped, and as it was of a slightly greater

specific gravity than the atmosphere, it became a constant source of danger to the public. As an illustration, he mentioned the case of Forty-second Street between Fifth and Sixth Avenues, where he resided. On this block, eight hundred feet in length, there were nine man-holes (or one to every hundred feet), one of them being directly opposite a large club house, and another opposite a church. The air was seldom free from the odor of sewer gas, and in damp or foggy weather the residents were frequently obliged to close their windows on account of it. The street was a great thoroughfare, and those passing through it constantly noticed the odor, but generally supposed that it was brought on the wind from some distant quarter.

What was required for ventilating the sewers was an apparatus which was aspirating. The impure gases should be driven out and diffused through the atmosphere at such a height that they could do no injury, while their place was supplied by fresh air. What Dr. Smith recommended was the use of metallic tubes connecting with the sewers and carried to a sufficient height above the house-tops to secure the above end. Were these adopted, there would always be a downward current of air into the vaults, and if the ventilating shafts were placed only at intervals of one hundred feet, he had no doubt the sewers would be thoroughly ventilated. This was a matter which ought to be regulated by the Board of Health; but when any complaint was made to them of the existing nuisance it was referred to the Department of Public Works as the proper authorities to attend to it.

The fourth paper of the report of the Committee on Hygiene was by the Chairman, DR. VAN DER POEL, on the subject of

DANGERS TO PUBLIC HEALTH FROM THE ERECTION OF HIGH APARTMENT HOUSES.

The growth of the city of New York, he said, constantly excited new interest. Not long since, a law regulating the construction of tenement houses had been passed. It wisely restricted the amount of the lot which could be covered by the building, and also required that every room should be open to the external air. Now the numerous apartment houses which were springing up with such rapidity in every section of the city, called for the most serious attention on the part of the Board of Health. It was true that the same restrictions just mentioned in regard to tenement houses were required in their construction, but another evil had arisen in connection with them, which required new regulations, and this was the enormous height to which they were now being carried. The introduction of elevators did away with many of the objections to this on the score of convenience, but the practice of erecting lofty apartment houses was fraught with serious evils, not only to their occupants, but to all the neighboring property. As long ago as 1869, the authorities of Paris had passed an enactment which required that no house should be more than one and a half times as high as the street on which it was built was wide. Furthermore, it required that even on the widest boulevards no house should be more than five stories in height, exclusive of the mansard. The results of this were most admirable, and Parisian apartment houses were everywhere recognized as the best of their class.

Dr. Van Der Poel then gave several instances in which apartment houses in New York were carried to an enormous height. Thus, one on Madison Avenue was one hundred and twenty-two feet high, or twice as high as the street was wide, and it covered ninety-five per cent. of the lot on which it was built. This matter had already engaged the attention of the insurance companies, as well as of the Fire Department, the authorities of which had declared that it was impossible to save from destruction by fire any portion of a building that was over sixty-five feet high. If the erection of these lofty buildings were to be permitted indefinitely, the streets would be converted simply into narrow chasms.

Having alluded to the disfigurement of the city, from an æsthetic point of view, caused by these enormously high buildings standing beside those of ordinary size, and spoken of the beautiful and regular appearance of the streets of Paris in contrast, he went on to mention some of the evils to which the inmates of such houses were subject. Since the use of apartment houses had come into vogue, no general epidemics had prevailed in New York; but in case of an epidemic of contagious disease occurring, isolation would be practically impossible. In the next place, the apartments on the first three floors of such houses were deprived of sunlight, and must necessarily be more or less unhealthy in consequence. Thirdly, the air-shafts employed to give ventilation were a constant source of danger. As long as the plumbing was new, there might be no trouble; but, later on, it could not be but that miasma would be wafted to all the families on the upper floors. Hence, while the upper apartments were more desirable on the score of getting more air and sunshine, they were the most objectionable on account of this danger. As one line of pipes was usually employed, it was terrible to think what might be the consequence of cholera or typhoid fever breaking out in such an apartment house.

In the next place, he considered the injurious effects of these high buildings upon surrounding property. In the opposite and adjoining streets no sunshine could penetrate, and however clean they might be kept, they would be damp and unhealthy, as the sun's rays were the most important agent in causing rapid oxidation. It was on this account that in Italian cities, when there was far more sunshine than here, the upper stories were, as a rule, preferred. Again, on account of the great height to which these buildings were run up, currents of air were liable to be caused which might cause the chimneys of adjoining houses to smoke, or which might interfere with the ventilation of their sewer pipes. In conclusion, he advocated the passage of a law regulating the height of houses in accordance with the width of the streets on which they are built, as was the case in Paris.

Miscellaneous business being now in order, the Secretary read the

RESIGNATIONS

of Drs. Austin Flint, Jr., William Thurman, James H. Low, M. B. DuBois and J. E. Lay; all of which were, on motion, accepted.

ADDRESS OF THE RETIRING PRESIDENT.

DR. DAVID WEBSTER then delivered his address.

He said that during the year past, the Society had been in a flourishing condition; more scientific papers had been presented than could be read, and the attendance had been much larger than ever before. At the annual meeting last month, there had been an attendance of eight hundred physicians, and, although about two hundred of them were non-members, he believed that it was the largest meeting ever held by any local society on this continent. One hundred and fifty new members had been added to the roll; but there was still room for missionary work, as the membership was not yet quite a thousand, and there were about sixteen hundred unsectarian practitioners in New York. In concluding, he spoke of the distinguished members who had died during the year, among whom were Drs. George M. Beard, John P. P. White, F. D. Lente, Charles Wright,

and J. Marion Sims. On motion, the adjourned annual meeting was adjourned; after which there was a

Stated Meeting.

THE PRESIDENT, S. OAKLEY VAN DER POEL, M.D., IN THE CHAIR.

The minutes of the above meeting having been read and approved, Dr. Van Der Poel, the new president, delivered his

INAUGURAL ADDRESS.

In the course of it, he said that the Society, which was not only the largest in the country, but contained some of the best known names in medical literature, was already in good working order. It had reached a point where better than merely ephemeral work should be done, and, he thought that the large number of hospitals in the city afforded a vast amount of rich material for study which had been hitherto practically denied to the mass of the profession, but which might be utilized to advantage through the agency of the Society. By this means the members might be enabled to study practically the relative value of different methods of treatment, the influence of diathesis, the affiliation of various complaints, and other similar topics. The collective investigation of diseases had for some time past been pursued with excellent results in Great Britain, and the British Medical Association had given aid and encouragement to the movement. He had often wondered why the matter had never been undertaken systematically here. It was true that some spasmodic attempts had been made in this direction; but the endeavor had been made to cover too wide a field. Such inquiry ought to be limited in its nature, and addressed to a comparatively few individuals. In England an example of the excellent work that had been accomplished, was furnished by arsenic, our knowledge of the effects of which had been materially increased by this means. He could not too highly recommend the advantage of self-study of disease, and would suggest as a topic which might perhaps be fruitful of good results, the investigation of dyspepsia, an affection which caused an unutterable amount of misery, but killed no one.

He then spoke of the death of Dr. Sims, whose name, he said, was almost a household word on both continents, and appointed Dr. W. Gill Wylie to read a memoir of him at the January meeting.

The paper of the evening, on

CEREBRAL EXHAUSTION,

was read by DR. J. LEONARD CORNING. The affection referred to, he said, was a functional one, but he believed that it was characterized by certain changes in the protoplasm of the brain-cells which, in the present state of our knowledge, we were unable to appreciate. The symptoms, taken in their chronological order, usually occurred somewhat as follows: Restlessness during the day, and sleeplessness at night; pains in the vertex or superciliary region, and sometimes confined to the occiput; disorders of memory; loss of will power; morbid irritability, often characterized by outbursts of unrestrainable anger; disorders of the vaso-motor system (cerebral hyperæmia often alternating with cerebral anæmia); disturbances of the heart's action; unevenness of the pupils; morbid dread of society; morbid fear of various kinds; and, finally, in some instances, hallucinations.

Having alluded to the predisposing and exciting causes, he went on to speak of the treatment. The principal point was to secure rest, by which the further drain upon the nervous system was prevented, and the energies recuperated. A gradually increasing amount of sleep was to be induced by keeping the patient in a darkened room for from ten to fifteen hours during the twenty-four. Whenever the patient awakes, nourishing food is to be administered in fluid form. Alcohol is generally required, and such tonics as cocoa, iron, and phosphorus are recommended, while systematic feeding is of the utmost importance. In the waking hours of the patient, reaction is to be indulged in, and all mental labor is strictly forbidden. The bromides are often of great service temporarily, and are to be given in full doses during the day, so as to insure sleep at night.

DR. PUTZEL said that he could not agree in some points with the writer. As to the circulatory disturbances in cerebral exhaustion, these were often advanced, but no proof of them was given. In the dead-house, these disturbances were not seen unless local disease was present. As to whether hyperæmia or anæmia was present in any given case, the best authorities often differ. The causes of cerebral exhaustion he believed to be heredity, worry, and general anæmia. When there was a hereditary tendency, it was usually found that no treatment was of much value. His general plan of treatment was a tonic and stimulant one, and the tonic he preferred was arsenic. The bromides, he thought, were very injurious in their effects. Often at first, their administration seemed to be followed by benefit, but subsequently they did much harm.

The paper was further discussed by Drs. David Webster, D. B. St. John Roosa, A. Jacobi, and E. Harwood, and Dr. Corning made a few concluding remarks.

The Society then adjourned.

NEW YORK SURGICAL SOCIETY.

Stated Meeting, November 13, 1883.

THE PRESIDENT, THOMAS M. MARKOE, M.D., IN THE CHAIR.

DOUBLE DISLOCATION OF THE PATELLA.

DR. F. LANGE presented a boy eleven years of age, who illustrated dislocation of both patellæ outwards in every attempt to flex the knee-joint. It was difficult to determine whether or not the abnormity was congenital, because it was not noticed until quite late. It had been simply observed that the child was not able to walk as well as other children, that his knees were exceptionally thickened, and became tired easily. Dr. Lange saw the boy about the first of June last, when he was pale, nervous, and sometimes fainted. When he walks he lifts his pelvis, and tries to keep the thighs as perpendicular as possible, thereby avoiding flexion at the knee-joints. The extensor muscles of the thigh are somewhat atrophied. Every time the joints are flexed the patella, which is abnormally small and flat, becomes completely dislocated, and turned so that its internal edge is directed in front, and the condyles of the femur can be easily marked out. There is a strong inward rotation of the femur during flexion. On the other hand he can extend the limbs completely only with difficulty; that is, they are stretched to about a right angle without hindrance, and then he makes a peculiar rotatory movement with the heel on the table and pushes the entire limb in order to complete the extension. If the patella is kept in position, he is unable to flex either joint. The hip-joints were normal. He had been wearing an apparatus, but without improvement. A complete cure probably cannot be obtained.

LIGATION OF THE COMMON ILIAC ARTERY FOR ANEURISM OF THE EXTERNAL ILIAC; OPERATION PERFORMED THROUGH THE PERITONEUM.

DR. LANGE also presented a patient with the following history:

The patient is thirty-seven years old; a musician;

admits having had gonorrhœa, but denies syphilis. He suffered from "ulcers in the throat" about six years ago, and presents still a hyperostosis of the right tibia of probably syphilitic nature.

In July, 1882, he first noticed pain in his left leg about the knee, which appeared quite suddenly and caused transitory intense lameness of the limb. In this way he suffered till January, 1883, being partly in hospitals, partly at home, but never entirely free from a discomfortable feeling or soreness in knee-joint. The joint is said to have been swollen, and was treated for some time by immobilizing dressing. A puncture was also at one time intended, but omitted on account of spontaneous improvement. The patient says that all through that time he had already a small lump, about the size of a pigeon's egg, in the left inguinal region. From January till May, 1883, the patient felt well, but in May he suddenly fell, on account of absolute lameness of the left leg, so that he had to be carried home, where he improved very soon. Such fits, without any pain, were repeated about three times within the next month.

In July, Dr. Lange saw the patient first. Several weeks previous to that he had been subject to severe suffering. The lump in his left groin, which so far had attained about the size of a hen's egg, had increased rapidly without apparent cause. Numbness and feeling of cold had befallen the limb, which became more and more weak, and a more or less severe pain along the anterior aspect of the thigh persisted.

On the 23d of July a pulsating tumor with all the characteristics of an aneurism occupied almost the whole iliac fossa, protruding the abdominal walls above Poupart's ligament. Its upper boundary ran from the anterior superior spinous process towards the umbilicus, ending about an inch below the same in the middle line. The latter formed about its medial outline. A spindle-shaped process of the tumor existed in the direction of the femoral artery below Poupart's ligament. But nowhere could arterial pulsation be detected on the limb, which was cool and had a bluish hue.

Ligation of the common iliac artery was performed as the only remedy worthy of consideration in view of the rapid growth of the tumor within the last few weeks, and I resolved to perform the operation through the peritoneum, on account of the difficulty which must have offered itself in this case to the retroperitoneal and customary way of procedure.

The patient was prepared by rest, diet, laxatives, and internal administration of bismuth, and the operation was performed under strict antiseptic precautions, without any serious difficulty, with the able assistance of Dr. McBurney and the House Surgeon at Bellevue Hospital on the 26th of July.

Dr. Lange decided to make a long incision, and it commenced, as could be seen from the scar, an inch and a half above the umbilicus, and reached downward about six inches. All the intestines were removed from the upper aperture of the pelvis and wrapped between large flat sponges outside of the abdominal cavity. An extra large speculum served as a good retractor and reflector, so that the second act of the operation, the ligation of the artery, was executed with safety and ease. The ligature consisted of silk, and was cut short. It could be ascertained that the artery was lifted from its normal bed by the blood-sac, over the medial aspect of which it could be traced for some distance.

No bad symptoms followed the operation, and the vitality of the limb remained unimpaired, excepting a small cutaneous necrosis on the large toe. The temperature was never very high, and as far as he remembered, only once above 102 F, at the time when the first movements from the bowels took place, and partly perhaps due to a cystitis in consequence of catheterization. The patient was discharged about five weeks after his admission. At that time a slight diminution of the tumor had already taken place, and a faint pulsation in the main arteries could be detected. Dr. Lange did not know whether that was not an error, because he was at a loss to discover any pulsation at this time. The temperature of the limb has become more nearly normal, yet it was somewhat less nourished, and is paler in color than the right one; sensation is normal, but reflex irritability is diminished *vis à vis* to the right side. The pain the patient complained of formerly has ceased, and the tumor has shrunk to the size of a good-sized orange.

COMPOUND COMMINUTED FRACTURE OF THE SKULL; ABSENCE OF BRAIN SYMPTOMS; HEALING BY FIRST INTENTION; RECOVERY.

DR. CHARLES MCBURNEY presented a child, five years of age, who received a compound comminuted fracture of the skull on the last day of October. He was operated upon a few hours after the receipt of the injury, under Dr. McBurney's direction, by Dr. Fuller, House Surgeon at Bellevue Hospital. There was marked depression of bone, but there were no brain symptoms. There was a ragged wound, about an inch in length, at the seat of the injury; and the operation was begun by extending this wound about an inch in each direction, when an area of bone about one inch in diameter was removed, made up of many small fragments. The dura mater was not injured. Before and during the operation, the parts were irrigated by bichloride solution, the edges of the wound were trimmed, and the aponeurotic layer, together with the periosteum, was brought together by one deep row of sutures, and the skin layer by another. No drainage-tubes were used. The wound was dressed with iodoform, prepared cotton and gauze, and a starch bandage was applied.

The dressing was not removed until the eighth day after the operation, when the wound was found in the condition of complete union, as then seen. Not a single unfavorable symptom developed during the progress of the case, and no dressing was required after the first was removed.

OSTEO-SARCOMA OF THE LOWER JAW.

DR. MCBURNEY also presented a colored boy, thirteen years of age, who had a tumor on the side of his face and neck, which was especially notable on account of its size. The tumor was said to have had a growth of nine years, and to have commenced in the lower jaw, from which time—according to the account—it had quite steadily increased in size up to the present date. According to the history, which was exceedingly meagre, the entire tumor was removed about three years ago; but Dr. McBurney had been unable to obtain any of the details of the operation. The growth seemed to involve the lower jaw, and possibly the upper jaw, and considerably narrowed the fauces and cavity of the mouth. Its circumference was twenty-five inches, and it measured eighteen inches from side to side. There had been an average growth of two inches during the last six months.

ARTERIO-VENOUS ANEURISM OF THE COMMON CAROTID ARTERY AND THE INTERNAL JUGULAR VEIN.

DR. L. A. STIMSON presented a patient, twenty-five years of age, who had traumatic communication between the common carotid artery and the internal jugular vein, produced by a stab with a penknife in February, 1882. A profuse hemorrhage occurred at the time of the injury, but it was arrested within two hours,

and did not return. At the end of a week, the wound was healed. The neck, however, remained swollen, and in the following June, after a spree, a lump appeared in the throat. The face and neck became swollen; there was some difficulty of breathing; and the patient consulted a physician, who called his attention to a peculiar thrill in the neck. The acute symptoms soon subsided, and in the following August the man resumed work, but soon found that it interfered with his comfort, produced a choking sensation, vertigo, etc., and he abandoned it. Since that time he had consulted several physicians, and had been uniformly advised to have nothing done. He came to Bellevue Hospital complaining of gastric distress, choking sensation, vertigo, dimness of vision in the left eye, and loss of hearing in the left ear. There was considerable exaggeration in his account of all these symptoms. At that time, however, there was a marked thrill over the left side of the neck down to the clavicle, with a loud double sound. Dr. Stimson finally decided to operate, with the intention at first to place two ligatures upon the vessel, but finally decided to apply only one, and that upon the proximal side of the common carotid artery, trusting that the recurrent stream from the distal side of the opening would not be sufficiently strong to give rise to any discomfort. The operation was performed on the eighth day of October. An incision was made so as to expose the artery above the omohyoid muscle; but the tissues overlying the vessel were found so thickened at this point that the incision was prolonged downward, and the artery tied below the muscle; a drainage-tube was introduced, and a dressing applied. The dressing was changed on the fourth day; the drainage-tube was removed; and from that time recovery was rapid. There was no rise of temperature above 100° F., except once, and then only for a few hours, when it sank and remained normal. The thrill, which ceased at the time the ligature was applied, was perceptible at the first dressing, but it was very slight; and it can now be felt, but in very much diminished force as compared with that which was present before the operation was performed.

During the progress of the case, after the operation, two accidents occurred. The first was on the tenth day. The man awoke from sleep with præcordial anxiety and distress, and also distress in breathing, and was very much alarmed. He was quieted with a moderate dose of morphine, went to sleep, and suffered no further inconvenience. Dr. Stimson thought that the symptoms were due to disturbance in the pulmonary circulation, due to transmission of a small embolus detached from the clot. Exactly where it came from, however, he was unable to say. Since that time the patient had had no return of a similar attack, but has had at intervals a peculiar distress which would seem to indicate that probably the explanation given for the first attack was incorrect.

The second accident occurred about the fourteenth day, when he complained in the morning of some loss of power in the right hand, with a moderate amount of dizziness which disappeared in the course of two or three hours. He has not suffered from any inconvenience of a similar character since. Dr. Stimson thought that undoubtedly these symptoms were due to cerebral embolism.

PRIMARY EXCISION OF THE ELBOW-JOINT FOR INJURY OF THE ELBOW.

DR. W. T. BULL presented a patient, forty-eight years of age, who fell three flights from a scaffolding, and received a compound fracture of the ulna, the olecranon being splintered into several pieces, and a vertical fracture or fusion between the condyles of the humerus. He had also a fracture of the ilium on one side. The operation upon the elbow-joint was performed twenty-four hours after the receipt of the injury. All the articular ends were excised, the entire olecranon, the head of the radius, the condyles of the humerus, making in all about two inches of bone, the periosteum being saved as far as possible. The limb was dressed in the right-angled position, and healed, after an attack of cellulitis, in five weeks. Peat and carbolic acid dressings. Eight months after the operation, the patient has now very little power of flexion, but he is able to lift considerable weight with the limb, and the motion of the fingers is satisfactory. He is able to put his hand to his head. While the result was not all that might be desired, Dr. Bull thought that it justified the operation, and that the limb even with its crippled condition was a great improvement on an artificial one.

DR. WEIR suggested that considerable benefit might attend the use of some lateral support for the limb.

AMPUTATION OF THE ENTIRE PENIS FOR EPITHELIOMA.

DR. BULL also presented a patient, æt. 43, who came into the New York Hospital with epitheliomatous ulceration of the penis, for which the entire organ was removed down to the insertion of the corpora cavernosa into the pubic bone, the corpus spongiosum being divided just in front of the bulb. The specimen was presented. It was a rather curious fact that the patient traced his disease to the cicatrix of a chancroid, which had been in existence twenty years before. The growth itself appeared first as a wart, and gradually extended, and he had withstood the ulceration with the suppuration, and the effect produced upon his general system with a great deal of pain for ten years before submitting to the operation. At the time the operation was performed, the ulceration had extended as far back as to within one inch and a half of the root of the penis, but the extremity of the glans was intact. There were induration and enlargement of the inguinal glands upon both sides to the size of a horse-chestnut. In amputating the organ, Dr. Bull followed Demarquay's method. The penis was encircled by two incisions, which started from just above its roots and joined on its lower surface to split the scrotum, and extended as far as the middle of the perineum. The corpus spongiosum was divided in front of the bulb and detached from the corpora cavernosa, and the scrotum on either side dissected back. The attachment of the crura to the pubic arch was divided with scissors. The bleeding was not excessive, and was easily controlled with artery clamps.

The urethra was slit up along its roof and floor, and stitched into the edges of the wound at the peno-scrotal junction. A drainage-tube was inserted at the lower angle of the wound and the edges sutured with catgut. Peat and "bichloride" dressing. Primary union failed, and the wound healed by granulation in six weeks, a catheter was left in the urethra forty-eight hours, at the end of that time a chill occurred and it was withdrawn. A bougie or sound was passed every day for a month, but none has been used for two weeks past. When discharged, a No. 30 sound could be introduced without difficulty, and the same number can be used now.

With regard to the enlarged glands in the groin, Dr. Bull had intended to remove them, but as the operation had already been prolonged and tedious, he decided to postpone their removal until a future date. Since then the induration has *almost* entirely subsided, the improvement in the patient's general condition has been perfectly satisfactory, and began immediately after the operation was performed. He is obliged to urinate in the sitting position. Dr. Bull thought that the wound would have healed more readily had the testicles been removed at the same time amputation of

the penis was performed, but the patient declined to part with all his evidence of manhood.

EXCISION OF THE WRIST-JOINT.

DR. H. B. SANDS presented a patient upon whom he had recently performed excision of the wrist-joint. He was a Swiss, forty-three years of age, and a waiter by occupation, who came under Dr. Sands's notice in the early part of last summer, having suffered for nearly a year with symptoms of strumous arthritis of the wrist, the disease having gone on to softening and destruction of the joint, without the formation of abscess. He was treated by immobilizing the joint, but without benefit. The wrist being considerably swollen, very painful, and tender, Dr. Sands decided to perform the operation of excision, which he did on the 31st of July, according to Langenbeck's method, by making a single incision upon the dorsum of the hand and wrist. It was found that the disease involved a great extent of the synovial membrane, which had to be almost entirely cut away. The ulna and radius were separated, so that they could be moved upon each other with crepitus, and before the operation; the bones were softened. The first row was removed by ordinary dissection, the other bones being removed with a sharp spoon; the trapezium, however, and also the pisiform bones being left. The extremities of the ulna and radius were removed, and the bases of all the metacarpal bones, except that of the thumb. A bone drain was inserted, peat dressing applied, and the arm suspended. When the first dressing was removed at the end of twenty-three days, the deep wound was found entirely closed, and there remained only a superficial ulcer which closed at the end of a few weeks. During the operation, the radial artery was divided, but no harm came from the accident. The hand is now beginning to become useful, and the patient has the power of extension and flexion of the fingers to a considerable extent. He can flex the first phalanges at nearly a right angle with the metacarpal bones. Apposition of the index finger with the thumb is easy, the extension of the latter being limited, in consequence of adhesion of the long extensor tendon to its sheath. The patient is free from pain, and is able to move his hand, and to grasp objects with considerable firmness. Passive motion was resorted to after removal of the dressing, and has been kept up steadily since. The operation was tedious, but Dr. Sands believed that Langenbeck's method of excision would be found preferable to that recommended by Lister, in which lateral incisions are practised.

DR. STIMSON remarked that he performed excision of the wrist last summer by the same incision, and found, as Dr. Sands had mentioned, that the removal of the bones was very easily effected.

DR. SANDS said he omitted to state that the power of the hand is very much increased when circular compression is made around the wrist.

ANEURISM BY ANASTOMOSIS OF FACE AND ORBIT—RIGHT SIDE; ELECTROLYSIS PERFORMED ON FACE; LIGATURE OF RIGHT COMMON CAROTID ARTERY.

THE PRESIDENT presented a patient whom he first saw with Dr. Damainville, and who had kindly furnished the following history of the case:

Emily C., æt. 43, widow, born in France, had children, all healthy; was born with nævus on right cheek near the eye, which, although quite large, did not seem to grow or pulsate until after her first confinement, sixteen years ago: then it began to grow steadily, extending towards the lip, but giving her no pain. Seven years ago, a Dr. Goodridge or Goodrich—the patient remembers neither the name nor the address of the doctor—probably tied the right superior coronary artery, so far as can be made out from her vague description. Shortly after the operation, whatever it was, the aneurism began to extend upward towards the eye. She did nothing for it, as it gave her no pain, until some time in January, 1883, when, having accidentally struck her head against the bedpost, the tumor began to pain her, and to increase in size.

On February 7, 1883, she came to the French Hospital for treatment. At the time of her admission, her condition was as follows: Tumor well marked, extending from orbit and lid to the lip, elevating the skin to the extent of two inches or more; pulsation very strong, and easily seen from a considerable distance. All bloodvessels on that side of the face enlarged; mucous membrane of mouth and gums so vascular that they bled on the slightest provocation; complains of sense of fulness and throbbing in eye and lip, and says that her vision has never been as good with that eye as with the other. On introducing the finger into the mouth, the pulsations are felt to be very strong and violent.

February 17, 1883, Dr. Charles Bliss performed electrolysis by means of a zinc carbon battery. Eight cells were used, several needles being thrust in various places. Application lasted twenty or twenty-five minutes. This operation was followed by quite an extensive slough at the upper part of the cheek, the wound healing by granulations and leaving a crucial cicatrix. No hemorrhage took place during or after this operation. The pulsations were entirely suppressed when the sloughing occurred, and for some little distance around it, but nowhere else. The other parts of the tumor began to increase very much in size; the lower lid and the upper lip being very much swollen and throbbing violently, thus showing that electrolysis was followed by beneficial results only where it produced sloughing, as stated above.

April 21.—By the advice of Drs. F. H. Hamilton and T. M. Markoe, the right common carotid artery was tied above the omohyoid, the gut ligature being employed. Ether was administered. Simply dry cotton was used as a dressing. Union by first intention occurred, the ligature being absorbed. No bad symptoms followed the operation excepting pain in the right arm and around the clavicle, which prevented her from raising the hand to the head for the purpose of combing her hair, which, after the operation, began to fall off profusely. Immediately after the operation all throbbing ceased in the tumor, except at the inner canthus near the medial line, where a slight pulsation could be detected with the finger; but the improvement was steady and progressive as could be judged from the diminished size of the face, the comparatively free motion of the lower lid, and the feelings of the patient in general.

June 8.—She was discharged from the hospital. Although the pain in right arm had very much diminished, she still had some—enough to impede the motions of the limb. Pulsations in lid and lip suppressed, but quite perceptible at the inner canthus.

September 4.—Called to see me to-day. No pulsations perceptible except at inner canthus. Angular artery seems to be enlarged. Pain in right arm entirely gone. Thinks her vision on that side is very much improved; her hair has ceased falling off. Says that for the first time in a number of years she can chew on that side of her mouth, and can brush her teeth without making the gums bleed. The cicatrix on the neck is very firm, slightly painful on pressure or when the weather is about to change. Cicatrix on the face where electrolysis was performed is hardly perceptible; says she feels strong, and has not been as well in years. In fact, the benefit resulting from the

operation is greater than usual, and her present condition is as satisfactory as could be desired.

DR. WM. S. HALSTEAD then read a paper on

REFUSION IN CARBONIC OXIDE POISONING.

(See page 622.)

DR. R. F. WEIR remarked that last spring his attention was called to the frequency with which coal-gas poisoning occurred in the past few years, and also to the fact that the greater number were due to gas made by the water process, in which carbonic oxide exists in the proportion of about twenty-five to thirty per cent.; whereas in ordinary coal gas, made after the old method, it exists in the proportion of only two to six per cent. The danger, therefore, from leakage, unburnt gas, etc., in the use of water gas, is apparently very great, and should be known more generally than it now is. Coal or naphtha gas is much safer.

THE PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, November 21, 1883.

THE PRESIDENT, WILLIAM M. WELCH, M.D., IN THE CHAIR.

DR. J. C. WILSON presented a

NOTE ON PARALDEHYDE AS A HYPNOTIC.

He stated that he had found the medicinal dose to be from thirty minims to two fluidrachms, and a drachm to be the average dose for an adult under ordinary circumstances. It is to most patients disagreeable, and must be administered with a considerable draught of water. The taste and odor are ethereal and penetrating. Patients complain of this taste several hours after taking it, and it may be recognized by its odor in the breath. It is probably eliminated unchanged by way of the lungs. Paraldehyde acts upon the cerebral hemispheres, inducing rather speedy drowsiness without preliminary excitement. "A lethal dose suspends the functions of the medulla and the respiratory centre, and the action of the heart ceases after the respiration." One observer (Brown) noted a slight depressant effect upon the heart in a single instance. It is stated that neither nausea, depression, headache, constipation, nor any unpleasant after-effects have followed its administration. Several of his own cases complained of the disagreeable after-taste already alluded to, and one or two of nausea.

Paraldehyde has been prescribed as a hypnotic, by the Italian physicians who have used it, in the various conditions calling for such a remedy, but they have found it especially serviceable in the sleeplessness of dementia paralytica, hysteria, and in other forms of disorder of the nervous system.

Dr. Wilson has prescribed it in nine cases, with a view to its influence as a pure hypnotic. In one hysterical patient it acted well for a short time, but lost its effect, and was discontinued. In a patient who could not sleep, after having acquired the habit of watching an invalid at night, it procured prompt and refreshing sleep. In a lady rendered sleepless by a sudden and appalling bereavement, it caused sleep, but was abandoned on account of the nausea which followed its administration. A gentleman who had sleeplessness and great mental depression, after a debauch, and who failed to sleep for several nights after reasonable doses of the bromides and chloral, took a drachm of paraldehyde, and slept seven hours, waking refreshed and hungry. On the next day, this patient, being disturbed after he had taken it, failed to sleep, but succeeded in sleeping on taking a second dose. The other cases were sleeplessness from ordinary causes, and were all more or less fully relieved. It appears speedily to require an increase of the dose. He expressed the view that paraldehyde will prove a useful addition to our sleep-inducing drugs, but will supersede neither chloral, which it resembles in its effects, nor any others among them.

NEW INVENTIONS.

THE "AMNIONTOME."

BY GEORGE F. E. WENCK, M.D.,

OF NINETY-SIX, S. C.

RUPTURING the membrane during childbirth I believe is considered the most simple operation in medical practice. Still I have found that the finger-nails, as invariably suggested in text-books, are very often of no avail. I have, to accomplish the rupture of the membrane, introduced knives and scissors, which at the best constitutes an awkward procedure. This led me to construct a very simple instrument, which I call the Amniontome, and which was made by Messrs. George Tiemann & Co., New York City. I presented it to the South Carolina State Medical Association in April last. From very satisfactory personal experience with the instrument, I venture to recommend it to the profession. The amniontome, as seen in the accompanying

figure, consists of a steel spring frame to which a small blade is attached. It is adjustable to the index finger of the right hand, but will fit any finger, both right and left. Placed in position it will not interfere with the main-joint of the finger, which can be moved at will while it is firmly attached. It has proved in my hands a simple and efficient means to rupture the membrane at any point presenting, during any of the stages of labor, needing very little skill or practice, and I only wish that the instrument may be of some service to the profession.

NEWS ITEMS.

BALTIMORE.

(*From our Special Correspondent.*)

SANITARY CONVENTION IN BALTIMORE.—The Sanitary Convention called by the State Board of Health of Maryland, met in the hall of the Young Men's Christian Association in Baltimore, November 27th and 28th, and listened to a number of interesting papers. The attendance was small, rather discouragingly so, but those who were present were repaid for their trouble.

DR. RICHARD MCSHERRY presided, and in calling the convention to order remarked that the political influence of a nation is as much dependent upon its muscular activity as upon its army and navy. Health is wealth. Our design is to combat physical evils by showing the people the best means of obtaining good food and pure air and water. Unthinking persons underrate medicine when they think it is simply the administration of drugs, for, in its higher sense, materia medica covers all that is of value to the physical interests of man. We accept the inevitable, but we must and will contest the ground step by step and inch by inch against all that form of evil which comes under the head of preventable disease. Prevention is better

than cure, as primitive innocence is better than sinning and repenting.

MAYOR LATROBE, in an *Address of Welcome*, said: "I am sure the result of your deliberations will be beneficial. No subject is more usefully interesting than that of personal and public hygiene. Upon it depends, in a great degree, the prosperity and happiness of a community. The success resulting from a proper attention to public hygiene is shown by the reduction in the death-rate of so great a metropolis as London, now regarded as one of the healthiest cities in the world. Here in Baltimore, with our surface drainage, abominable system of cesspools, and other nuisances, our health reports show a very small death-rate. I attribute this in a measure to our abundant supply of good water, the rolling character of the ground upon which the city is built, aiding, as it does, the surface drainage, and enabling every heavy rain thoroughly to wash out the streets, the absence of tenement-houses, the naturally healthy location of the most populous sections of the city, and last, but not least, the vigilance of our health department. With a proper system of sewerage for sewage matter (it is a question with me whether surface drainage for storm water is not really more conducive to public health), a more liberal use of our ample water supply, the introduction of public baths, and the entire abolition of the sixty odd thousand sinks now honeycombing the surface ground of our city, I have no doubt our health department would guarantee to make Baltimore the healthiest city in the world.

"I refer to these matters incidentally in my remarks, as I see by the programme that many of them will be matters for discussion in your deliberations. It was with much pleasure that I listened a few days since, at the Johns Hopkins University, to a lecture on the subject of sewerage as applicable to large cities. I believe the time has come when Baltimore must realize that a proper system of sewerage is necessary for the preservation of its public health, and I am sure that a people which has had the courage to invest over nine millions for the introduction of water, will not be alarmed at the contemplation of the cost of a proper system of sewerage, required to protect health, and which, if judiciously controlled, will be as self-sustaining as are our great water works."

The HON. H. A. HALLOWELL, of Montgomery County, read a paper in which he said: Rural districts are far from being the abodes of health that enthusiasts suppose. Bards have sung the praises of pure water, fresh air and living near nature, yet prosy truth discloses the fact that the rate of mortality of cities is not greater than that of the country. Vitiated air, wretched diet, impure water, never-ceasing toil, exposure, and hardship, claim victims more frequently in the country than statistics show. Country villages are really in need of sanitary information and regulations. In his own county, a certain pond of stagnant water which had been dammed up by the County Commissioners, caused last year several deaths and forty cases of malarial fever. In another part of the county, a neglected fish-pond was the source of an epidemic of fever causing a number of deaths, four of which were in one house.

DR. W. S. FORWOOD read a paper on the so-called *Canning-house Fever*, a disease caused by the accumulation of refuse matter from the establishments, for canning vegetables, fruits, etc. There is some difference of opinion among physicians as to the extent to which these canneries are factors of disease, but all agree in declaring them an unmitigated nuisance. So far as stench was concerned, he recommended legislation compelling the proprietors of the canneries to remove all refuse in water-tight tanks within a certain time. He stated that it would make a good fertilizer.

DR. J. F. MCSHANE, Assistant Commissioner of Health of Baltimore, read a paper on *Vital Statistics*, urging legislation to provide a thorough system of reporting and collecting such data.

DR. JOHN MORRIS said that the Secretary of the State Board had been provided with a thousand dollars a year to register births, deaths, and marriages, but that not a single entry had been made. He himself had drawn up a bill to abolish this useless office, but the bill had been stolen.

At the sessions on November 28th, papers on *Sewerage* were read by COL. GEORGE E. WARING and MR. C. H. LATROBE, C.E. Col. Waring's paper was a criticism upon Dr. Chancellor's recommendation of the Liernur system, pointing out that this system does only a part of what is desired, and that at a very high cost.

Mr. Latrobe said that in regard to the choice of a system of sewerage, we may safely conclude that there are but two fundamental questions, viz., which is the most efficient and economical as applied to each case which arises. In making this choice, the sanitary engineer and the sanitary physician, if I may be allowed the expression, should work in harmony. Each can contribute knowledge gained in his particular branch; the engineer, with his knowledge of physical forces, meteorological phenomena, adaptability of materials, and economy of workmanship, must be aided by the physician's knowledge of the seeds of disease, the dissemination, and insidious modes of attack. Together, they may hope to checkmate the enemy; singly, either may make grave errors. The systems now before the public for the collection and disposal of the sewage of cities and towns are: the system of dry removal, as it is called; the water-carriage system, and the pneumatic system. As to dry removal, this system proposes to deal simply with human excreta, totally disregarding all other household waste, as well as that from manufactories. Such a system must, of necessity, be a failure for large cities, from its want of scope.

After having equipped every house with dry-earth closets, you must, of necessity, provide in addition a complete system of sewers to carry off the waste water of the household and of the factory. Water-carriage is divided into two systems, the combined and the separate. The combined is that system in which a single set of drains or sewers is used to carry off household waste of every description (except ashes and solid garbage), which is pretty accurately gauged by the water supply to each house, the liquid refuse of factories and the storm water which falls upon the roofs, yards, and streets. This system is suited in those places where the conditions require that the storm water should be at once taken underground and carried to a distant outlet, whilst economy and structural difficulties forbid the building of two distinct and equally extensive systems—one for sewerage proper and one for storm waters. The separate system is alike with the combined in the fact that water is the vehicle and gravity the motor, but here the similarity ends. The sewage is conveyed in small pipes. The water, which enters the house clean and pure by the water pipes, after passing through bath-tubs, kitchen sinks, and water closets, leaves it as sewage. Cut off, as these sewers are, absolutely from all storm water flow, their dead ends may be taken care of by artificial means. This need is met by providing automatic flushing tanks, which empty at any interval desired into the dead ends, and being filled with clean water only, send a purifying stream into every small artery of the system. For Baltimore the estimated cost of the separate system, exclusive of outfall main, is $4730 per mile; including outfall main, $9790. This outfall main carries out sewage to the Chesapeake Bay, and is a costly but necessary addition to our city.

At the afternoon session DR. JOHN MORRIS read a paper on the *Etiology of Baltimore Catarrh*. He said there are at least twenty-five thousand unfortunates in Baltimore who are affected with catarrh. Many of those so affected are obnoxious to themselves from the ozœna therefrom. He described the disease and its manner of growth. He said that nasal catarrh was aggravated by certain conditions of the weather. The great prevalence of the disease is due to the character of the house air breathed during the winter and spring months. At the present time more than one-half of the houses of Baltimore are heated by the Latrobe stove, or by modifications of the same. This stove, as originally used, was not injurious to health, but changes were made which entirely changed its effectiveness. The air drawn by the stoves in present use is from the cellars, and the known noxious cellar-gases are not favorable to good health. These gases are caused by the subsoil of the city, which is impregnated with gases. These poisonous germs, which are scattered throughout, are due to the abominable system of wells and cesspools which is in use in Baltimore.

Other papers presented were by Dr. W. S. Wyman, of the Marine-Hospital Service, on *Quarantine;* by Dr. E. J. Henkle, on the last *Smallpox Epidemic in Baltimore;* and by Dr. R. Gundey, on the *Conflict of State Powers and Individual Rights in Sanitary Matters.*

All the papers read will be published by the State Board of Health.

THE JOHNS HOPKINS COURSE ON MUNICIPAL HYGIENE.—Dr. John S. Billings, U.S.A., is now delivering a course of twelve lectures at the Johns Hopkins University on "Municipal Hygiene." These lectures are attracting much attention, not only from the medical profession, but also from civil engineers, architects, plumbers, and others interested in sanitation. Whatever the distinguished lecturer undertakes he does well, and the present course cannot fail to increase his already well-earned reputation as a sanitarian. Most of the questions concerning public health now forcing themselves upon municipal authorities find exhaustive treatment.

. THE ENORMOUS MORTALITY OF COLORED INFANTS.—One point of highest importance brought out by Dr. Billings is the small expectation of life of the colored population of our cities, as shown by tables compiled, for the first time, we believe, under his direction. From these it appears that of one million colored infants born in Baltimore, one-half will have perished before attaining the age of two years. A similar mortality prevails in other cities where the colored population is large. When it is remembered that of an equal number of white children born in Baltimore, one-half will live thirty-five years, the disproportion becomes startling, and makes imperative a close investigation into the causes, conditions, and remedies for this lamentable state of affairs. Another interesting feature of these tables is the disproportionately greater number of aged colored females than of males. Of the colored males, there will be left at 65 years 57,252; of females, 93,171; of males at 75 years, 19,440; of females, 56,283; of males at 85 years, 2929; of females, 12,726; of males at 95 years, 315; of females, 1477; while 75 males and 158 females will attain 100 years of age. As will be seen, these figures show rather a remarkably short duration of life of colored men than of longevity of colored women, who appear to be much shorter-lived than their white sisters.

DR. J. SHELTON HILL, a young physician of much promise, died last week of consumption, after a prolonged illness. Dr. Hill, originally from Alabama, had spent all his professional life in our midst, and, until overcome by the malady that destroyed him, bade fair to attain an eminent position in the profession.

WASHINGTON.

(*From our Special Correspondent.*)

MEASLES has appeared in Washington to a considerable extent, and although the public schools still keep open, several private ones have had to close.

ST. LOUIS.

(*From our Special Correspondent.*)

THE ST. LOUIS MEDICAL SOCIETY ON THE RECOMMENDATION OF PROPRIETARY MEDICINES.—The excitement which has been brewing in the St. Louis Medical Society within the past few weeks resulted in a slight explosion at the last weekly meeting, Saturday night. Stronger timber had been added to the Committee on Ethics, and a strong report, condemning such advertising as the recommendation of proprietary and other medicines, was presented to the Society. Strange as it may seem, the gentlemen who have fanned the breeze, who first inaugurated the movement, now seem anxious to throw ashes upon the flames, which have spread somewhat beyond their anticipations. The report was attacked, and even high influence was lent to the very mild substitute proposed in its place, the report appearing too harsh, and an endeavor was made to substitute another, to the following effect: "That it is the sense of the St. Louis Medical Society that all endorsements of proprietary medicines are in bad taste." Whatever the opinions of the members be, the Code of Ethics, as such, does not, it is believed, directly cover the ground. In the exciting debate which followed, a motion was even proposed condemning, not only the recommending of preparations and nostrums, but especially the advertising which results from the appending of the titles of college professors, which are often attached to such recommendations, the case of the Cocoa Plug-tobacco being especially cited, in which a number of prominent gentlemen of this city and members present at the meeting are implicated.

Notwithstanding the variety of opinions and motives, the very strict report of the Committee was adopted, to wit: That it is a violation of the Code of Ethics to endorse publicly preparations of any kind, at least, as is the usual fashion, to permit the names of the endorser to accompany the advertisement of remedies, whether they be nostrums or not, of known or unknown ingredients.

This is certainly clear and distinct, and it now remains for other leading societies to follow, that the opinion of the profession throughout the land may find a distinct expression, and that an unquestioned position may be taken. Let the justice of this move be disputed, or let it receive the hearty endorsement of medical societies elsewhere.

CHICAGO.

(*From our Special Correspondent.*)

THE DISPOSAL OF THE CHICAGO SEWAGE.—Dr. Curtiss, of Joliet, read a paper recently before the Chicago Pathological Society on the subject of the disposal of Chicago sewage. He took strong ground, hardly as rational as strong, against the project of sending our sewage down the canal, through Joliet, and into the Illinois River below, diluted with an abundance of the water of Lake Michigan. He claimed that it would never do, that it would damage nearly the whole State, especially that part bordering on these water-courses,

and finally that the sewage should be utilized as it is at the little town of Pullman.

Now, if there is any one thing about which all our local sanitarians, as well as those elsewhere in the State, have been of one mind, it is that the canal ought to be deepened and widened so as to allow the city's sewage all to pass off in the way indicated; that, sufficiently diluted with lake water, it will be rapidly oxidized, and will be devoid of any bad odor.

The town of Pullman has been very successful in utilizing its sewage for fertilizing purposes at a profit. The problem of doing this for so large and rapidly growing a city as Chicago, is one of such proportions that nobody has succeeded in securing even the attention of the public here to this method. Nearly all are agreed that every effort should be put forth to prevent the further discharge of the sewage into the lake; for, even if there is no danger of its reaching the Crib, whence comes our drinking water, the people believe there is, and will act and vote accordingly.

SURGEON-GENERAL MURRAY entered upon the duties of his office on November 28th.

A ROMANCE BY DR. MARION SIMS.—It is announced that the late Dr. Marion Sims has left a sparkling sketch which will appear in the February *Harper*. It is entitled, "Lydia McKay and Colonel Tarleton," and describes one of the most romantic episodes of the Revolution, the rescue of her imprisoned husband by the fair and clever Lydia.

THE NEW YORK SOCIETY FOR THE RELIEF OF THE WIDOWS AND ORPHANS OF MEDICAL MEN.—The annual meeting of the New York Society for the Relief of Widows and Orphans of Medical Men was held on November 28th. The reports of the several officers showed that the members of the Society now numbered 140, of whom 92 are for life, and 48 are annual subscribers. The Society has extended aid to thirteen widows and four children of deceased members during the year.

The following officers were elected: President, Dr. Isaac E. Taylor; Vice-presidents, Drs. T. F. Cock, S. S. Purple, and J. L. Vandervoort; Treasurer, Dr. John H. Hinton; Managers, Drs. John G. Adams, William N. Bakeman, William Detmold, S. T. Hubbard, John T. Metcalfe, Robert G. Remsen, and J. Wiener.

THE JOHNS HOPKINS UNIVERSITY LECTURES ON MUNICIPAL HYGIENE.—DR. JOHN S. BILLINGS has now delivered the fifth, sixth, seventh, and eighth lectures of the course on *Municipal Hygiene*, of which the first four were reported last week. They can be briefly summed up under the following:

Disposal of Refuse.—This important problem can be dealt with in two ways, (1) the savage way of each one attending to it for himself as he pleases, throwing it into cesspools or the street; and (2) the coöperative plan, by which the city takes it in charge. The former existed in Paris until 1870, when the siege put an end to it. The latter plan can be carried out either by the city's employés (the better way), or by contract (the cheaper way). Boston has the most satisfactory system in this country. The whole matter has been for many years under almost complete control of an efficient superintendent, whose employés have been well trained. The cost of this system is $76,000, while the revenue is $27,000 yearly.

Great difficulty is experienced in finding suitable dumping places. Sometimes it is used to fill lowlands (but this is objectionable from both a sanitary and an engineering point of view); or it is carried away by barges, or dumped into the sea at some distance (but here there is at times danger of causing nuisances on adjacent shores); a third method, very good from a sanitary point of view, is cremation, which is employed in Leeds and Manchester. The most important refuse is human excreta or sewage, which is typical filth. The cesspool plan for its disposal is *very* dangerous to the health of the population; all sanitarians agree that it should be abolished. It finally reaches the terrible condition found in Memphis, where the contents of the cistern did not differ materially from those of the neighboring cesspool, and where it contributed greatly to the yellow-fever epidemic. The watertight cesspool is but little better and very expensive.

It has been proposed to remove sewage by water-carriage. Here three things must be considered (1) the conveying away of polluted water; (2) the drainage of subsoil; and (3) surface drainage. Sewers were first intended for surface water only; more recently they are employed to remove other matter.

Systems of Sewerage.—About thirty-five years ago it was suggested in England to carry off sewage by separate sewers. This plan has been applied to Memphis, by Col. Waring, and is a success. Arguments in favor of this system over the combined system, are that: since the amount of rainwater is very large, compared to the amount of sewage, the rainwater sewers are much too large for sewage, and unless made egg-shaped in cross section (with small end down), they accumulate deposits; for the depth and velocity are little. (The egg-shaped sewers are used with success in Mainz, Germany.) Moreover, the sewers for sewage in the separate system contain less noxious gas, are better ventilated than those of the combined system, and cost less than one-half and often only one-third of the latter. Baumeister says that where a town extends along a natural water-course, and has wide cross streets running to the water, the surface water may be run off in gutters. The only underground work then is for sewers for sewage only, to which is eventually added a system of subsoil drainage. There should always be a separate system for carrying off subsoil water—a system of pipes with loose joints is used in Memphis. Even where three separate systems are necessary, one for sewage, one for surface water, and one for subsoil water, the cost is but slightly larger than that of the combined system.

The Liernur pneumatic system is condemned by all leading engineers in Germany, England, France, and America. Dr. Billings is opposed to its introduction into any city on both sanitary and economic grounds. Of all systems with which he is acquainted, he considers that of Philadelphia to be the worst.

House Drainage and Plumbing.—The excreta discharged into house-drains are not dangerous if removed before putrefaction sets in. A good system of house drainage requires the separation of the soil-pipe of a house from the sewer by a trap; the securing of ventilation to the house-side of the trap; and the shutting off of the house-drainage from the sewer by a trap. The fresh-air inlet is very important. Every fixture through which foul water is to pass should have a trap as near the fixture as possible. The best traps are the S and half-S traps. It has been shown that very little gas passes through these, and Carmichael has proved that no germs do. The daily use of so-called disinfectants is not advisable; they are for the most part worthless, destroying only the smell, and not the germs and contagia of disease; and secondly, those that are really good are very expensive. There should be no direct connection between the water-supply pipes of the house and water-closet; for otherwise closet-air is liable to get into water pipes.

Streets.—In regard to their paving with cobblestones and Belgian blocks, there is great objection, on ac-

count of the gradual pollution of the subsoil, which in warm weather becomes very dangerous; and on account of the noise and rattle, and injuries to horses and carriages. By placing a layer of cement concrete under the stones, the pollution of the subsoil is prevented, and the pavement becomes more elastic, which quality is desirable for horses and carriages. Wood paving is objectionable from a sanitary point of view. The best pavement where there is little traffic is asphalt laid in concrete. The evils of dirty streets fall most heavily on the children of the poor.

Parks provide means of recreation to the citizens, and are the reservoirs of fresh air to ventilate the city. Their beneficial influence can easily be seen. London owes much to its eleven thousand acres of park for its low rate of mortality. Parks are especially beneficial to the poor.

Cemeteries.—Rural cemeteries have everywhere superseded graveyards in the city. Cases of disease resulting from them are almost entirely unknown. While our cemeteries are generally satisfactory, our methods of burial are bad, often dangerous. Bodies should be buried as soon as possible, in light wood caskets, so as to let the germs of putrefaction destroy it, and any specific germs of disease in it, as quickly as possible. *Cremation*, except in epidemics, is not advisable; it tends to promote crime, and is not cheaper than inhumation.

SUCCESSFUL TREATMENT OF CHOLERA.—The State Department is in receipt of a letter from the United States Consulate at Port Louis, Mauritius, enclosing quite a long account of the successful treatment of cholera by T. Edwards Fyers, Esq., who accidentally discovered the remedy in treating a case of supposed poisoning, but which was in reality a case of cholera.

The treatment is numerously endorsed by medical men of high standing, and the account contains a tabular statement giving date of entering into hospital, name, symptoms, treatment, date of discharge, and result in one hundred fifty cases, only *one* of which resulted fatally. Mr. Fyers is not a medical man, "but being impressed with the idea that the symptoms of the disease were produced by poisonous matter in the stomach and bowels, proceeded on the common-sense principle of giving emetics and purgatives to remove it."

"The emetic employed was thirty grains of ipecacuanha and two grains of tartar emetic, followed by very large quantities of hot water to keep up the action of vomiting, and the purgative was castor oil. In every case but one this remedy appears to have given immediate relief, arresting the progress of the disease. In case either vomiting or purging should continue, the usual doses of dilute sulphuric acid will be sure to stop it. It has been found that sulphuric acid has a more successful effect if the stomach has been thus cleared. The patient should not be allowed to eat anything for several days, till the tone of the stomach has been restored. After the vomiting had ceased a single dose of castor oil was given, but no stimulants administered."

It will be remembered that the dilute sulphuric acid treatment of cholera is mentioned in several places in the *Report on the Cholera Epidemic of 1873*, prepared by order of Congress, by Supervising Surgeon-General John M. Woodworth, and Surgeon Eli McClellan of the Army. It was also highly commended by Dr. Nichols, of New York, who used it in the shape of sulphuric acid lemonade, quite successfully.

CHOLERA IN CHINA.—Consular reports from Shanghai, under date of October 16, state that the cholera has about disappeared in that locality, the last death having occurred on the 21st September. At Calcutta the total deaths from cholera for the week ending September 29, is reported to have been ten.

SMALLPOX IN RIO.—Smallpox is still prevailing as an epidemic in Rio de Janeiro; thirty-nine deaths are reported for the week ending October 20, 1883.

YELLOW FEVER AT SANTIAGO DE CUBA.—There were twenty-nine deaths from yellow fever at Santiago de Cuba during the month ending October 31, 1883.

HEALTH IN MICHIGAN.—Reports to the State Board of Health, for the week ending November 24, 1883, indicate that erysipelas has increased, and that inflammation of the brain, diarrhœa, and remittent fever have decreased in area of prevalence.

Including reports by regular observers and others, diphtheria was reported present during the week ending November 24, and since, at sixteen places; scarlet fever at fifteen places; and measles at six places.

OBITUARY RECORD.—The death is announced on the 19th of November, in London, of MR. C. HILTON FAGGE, Physician to Guy's Hospital, in his forty-sixth year.

NOTES AND QUERIES.

PREVENTIVE INOCULATION OF SCARLATINA.

IN our issue of last week, it should have been stated that the observations on the "Preventive Inoculation of Scarlatina with Scarlatinal Virus derived from a Horse" were made by Dr. J. W. Stickler, of Orange, N. J.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 26 TO DECEMBER 3, 1883.

WOLVERTON, WILLIAM D., *Major and Surgeon.*—Assigned to duty as Post Surgeon at Washington Barracks, D. C.—*Par. 7, S. O. 222, Department of the East*, November 27, 1883.

BROWN, PAUL R., *Captain and Assistant Surgeon.*—Assigned to duty in the Department of Arizona.—*Par. 4, S. O. 273, A. G. O.*, November 28, 1883.

CARTER, W. F., *Captain and Assistant Surgeon.*—Relieved from duty at Washington Barracks, D. C., to take effect at the expiration of his present leave of absence, and assigned to duty at Little Rock Barracks, Arkansas.—*Par. 4, S. O. 224, Department of the East*, November 30, 1883.

MERRILL, JAMES C., *Captain and Assistant Surgeon.*—Relieved from duty in the Department of the East, and assigned to duty at Columbus Barracks, Ohio.—*Par. 4, S. O. 270, A. G. O.*, November 24, 1883.

SHUFELDT, R. W., *Captain and Assistant Surgeon.*—Now on sick leave, relieved from duty at Jackson Barracks, New Orleans, La.—*Par. 3, S. O. 224, Department of the East*, November 30, 1883.

APPEL, A. H., *First Lieutenant and Assistant Surgeon.*—Relieved from duty at Fort Warren, Massachusetts, and assigned to duty at Madison Barracks, N. Y.—*Par. 4, S. O. 217, Department of the East*, November 21, 1883.

BREWSTER, WILLIAM B., *First Lieutenant and Assistant Surgeon.*—Extension of leave of absence granted September 15, 1883; further extended two months.—*Par. 4, S. O. 271, A. G. O.*, November 26, 1883.

MADDOX, THOMAS J. C., *First Lieutenant and Assistant Surgeon.*—Granted leave of absence for two months.—*S. O. 136, Department of the Missouri*, November 24, 1883.

RICHARD CHARLES, *First Lieutenant and Assistant Surgeon.*—Assigned to duty at Jackson Barracks, New Orleans, La.—*Par. 2, S. O. 224, Department of the East*, November 30, 1883.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

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